DOCUMENT RESUME

ED 318 884 CE 054 711

TITLE Content of General Education in Relation to Occupational Training. Country Experiences.

INSTITUTION United Nations Educational, Scientific and Cultural Organization, Bangkok (Thailand). Principal Regional Office for Asia and the Pacific.

PUB DATE 88

NOTE 72p.; Product of the Study Group Meeting of the Asia and Pacific Programme of Educational Innovation for Development (Bangkok, Thailand, March 1-8, 1986).

AVAILABLE FROM UNESCO Principal Regional Office for Asia and the Pacific, P.O. Box 1425, G.P.O., Bangkok 10501, Thailand.

PUB TYPE Collected Works - Conference Proceedings (021) -- Reports - Descriptive (141)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS Developed Nations; Developing Nations; Educational Philosophy; Educational Policy; Educational Practices; *Education Work Relationship; Employer Employee Relationship; Foreign Countries; *General Education; *Job Training; Postsecondary Education; Program Implementation; Retraining; School Business Relationship; Secondary Education; *Vocational Education

IDENTIFIERS *Asia; *Australia

ABSTRACT

Studies were conducted in 10 countries of Asia and the Pacific (Australia, China, India, Malaysia, Pakistan, the Philippines, Republic of Korea, Socialist Republic of Viet Nam, Thailand, and Turkey) to determine whether general education school leavers are able to meet the requirements of various occupational training programs. Each country reviewed its own policies and objectives of education, particularly the general education system as it relates to the preparation of skilled workers for various occupations. This involved examining the different training and retraining programs along with the content of general education and the matching of admission requirements in the first with competencies acquired in the second. Congruence between the two components is believed to improve the job prospects of graduates, because they could be easily trained for various jobs. This issue was raised in the 10 countries, and the transition from education to the world of work was also examined. The studies in the countries show how various efforts toward bridging any gap between general education and vocational training have been made. The first four chapters of this report examine educational policies--objectives, structures, and content, occupational training and retraining, directions and trends in occupational areas, and raising the relevance of training for employment in the 10 countries. The final chapter offers some conclusions and recommendations for the future. (KC)

ED318884

Content of General Education in Relation to Occupational Training

Country Experiences

APEID

Asia and the Pacific Programme of Educational Innovation for Development

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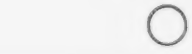
Unesco. Principal Regional Office for Asia and the Pacific.
Content of general education in relation to occupational training: country experiences. Bangkok, 1988.
61 p. (Asia and the Pacific Programme of Educational Innovation for Development)

1. SECONDARY SCHOOL CURRICULUM – CAREER DEVELOPMENT – ASIA/PACIFIC. 2. SECONDARY EDUCATION – VOCATIONAL TRAINING – ASIA/PACIFIC. 3. EDUCATION AND EMPLOYMENT – ASIA/PACIFIC. I. Title. II. Series.

373.19



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for Development

Content of General Education in Relation to Occupational Training

Country Experiences

UNESCO PRINCIPAL REGIONAL OFFICE
FOR ASIA AND THE PACIFIC
Bangkok, 1988

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Published by the
UNESCO Principal Regional Office for Asia and the Pacific
P.O. Box 1425, General Post Office
Bangkok 10501, Thailand

Printed in Thailand

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BKA/88/OP/116-200

PREFACE

The improvement of job prospects is one of the foci in the programme area of education and work under the Asia and Pacific Programme of Educational Innovation for Development (APEID).

In October 1984, an APEID Regional Planning and Review Meeting on Work as an Integral part of General Education was convened in Hanoi, Socialist Republic of Viet Nam. In preparation for this Meeting, five national studies were prepared to examine the different training and re-training programmes for teaching personnel involved in the implementation of curriculum changes to incorporate the development of employable skills within the context of general education.

Another five national studies were completed between 1984 and 1986, bringing the total of studies on the subject to ten. These studies were then reviewed and synthesized by a study group which met in Bangkok from 1 to 8 March 1986. The national studies were prepared by individuals or groups of researchers in the different countries as follows: Garry LeDuff for Australia; the Central Institute for Educational Research for China; Thiru K. Gopalan, Thiru A. Muthukrishanan, S.S. Rajagopalan, Manda Krishnamurthy and M. Raghurou Singh for India (Tamilnadu); Fatimah Abu Bakar, Kong Meon San, Chan Foong Mae for Malaysia; Abdul Ghafoor for Pakistan; Minda C. Sutaria, Juanita S. Guerrero, Esperanze A. Gonzalez, Edith B. Carpio, Paulina M. Castano for the Philippines; Mu Keun Lee for the Republic of Korea; the National Institute of Education and Science for the Socialist Republic of Viet Nam; the Guidance Centre of the Ministry of Education for Thailand; and Ziya Bursalioglu, Mehmet A. Kisakurel, Hifzi Dogan, Leyla Kucukahmet for Turkey.

This publication, prepared in its final version by Dr. Esperanza A. Gonzalez, is the result of the above Study Group Meeting.

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FOREWORD

The main aim of each study was to determine whether general education school leavers are able to meet the requirements of various occupational training programmes. Each country reviewed its own policies and objectives of education, particularly the general education system as it relates to the preparation of skilled manpower for various occupations. This involved examining the different training and retraining programmes along with the content of general education and the matching of admission requirements in the first with competencies acquired in the second. It is believed that congruence between the two, if achieved, would improve the job prospects of the graduates as they would be easily trained for various jobs. If gaps exist between the two and a mismatch occurs between education and training it is quite obvious that certain adjustments need to be made.

In the national studies, as well as during the study group meeting, the mismatch between education and employment was raised as an issue in both the education and the employment sectors. It has been studied in many countries, but it is still an issue. The transition from education to the world of work has been provided for in these countries through various occupational training programmes. There is a formulated proposal for a one-to-two year period of educational employment after the completion of secondary education to link school with employment.* In either case, the transition period activities have to build on what transpired in the general education programmes and look forward to present-day occupational demands. The planner of the transition period programme, whether it is a vocational training programme or a post-secondary educational pre-employment programme needs specific information in the two areas that have to be linked. The studies conducted in ten different countries show how various efforts towards bridging any gap between general education and vocational training have been made.

The general secondary education programme may, itself, provide the link through an integrated, strengthened and diversified vocational education component. This will require a longer period of secondary education and a more systematic linkage between the academic and vocational components of the curriculum. Although part of the general education curriculum aims to expose the learner to working life situations, some more concrete experience in special occupations would be needed to accomplish the predetermined objectives and therefore less time would be spent for pre-vocational training.

Occupational training programmes may be offered between general education and before starting work. This is the scheme in many countries and it is useful particularly for early school leavers, or school 'drop-outs' who desire to go to work but often lack the necessary qualifications. Education, therefore, not only promotes

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* UNESCO: Educational Employment; Speculations for the Future, Paris, October 1978.

development of work ethics but also contributes to the inculcation of basic life skills that people need to further develop. The basic life skills include communication and comprehension abilities, numeracy along with scientific competence as well as overall physical, mental and moral development of each individual. The level of specific skills training depends on the level of education; considering the formal schooling general education programme.

The vocational training programmes offered are of many types and have diversified content. Since these are designed to promote better job prospects for those who seek entry into them, the needs and aspirations of these job seekers are a primordial consideration in planning the programmes. Aspirations are often lofty but they are tempered by reality. Thus, training also provides occupational guidance which not only prepares the trainees for work in general, but for specific kinds of work where they are most likely to succeed. This practically means an inventory of the personal abilities and the basic qualifications on which training is based. A knowledge of self in the context of different job requirements is necessarily part of the preparation for the world of work.

The countries experiences show that an inventory of available jobs and occupations and their requirements must also be the responsibility of those who offer occupational training. It was found that people need to be prepared for jobs that exist presently, or will exist in the immediate future. Such approach results in avoiding frustrations of some of the trainees and also provides the necessary manpower for the country's development. In this way, the society's expectations of the contribution that education makes to the national development efforts are fulfilled.

For example the role of newly emerging technologies for the developmental needs of the countries places new demands on education to respond to the needs of this new environment on each individual and his education. Particularly important is the emerging new information technology, the role of computers and their impact on the future life of society. There is also need not only for new trends in occupational training but sometimes untraining and retraining in order to produce the necessary manpower that can meet the requirements of a rapidly changing world of work.

The country experiences that are presented in the following chapters reflect certain common trends and growth points, they illustrate commonalities as well as differences in approaches which would enrich the insight of the readers. Since India did not participate in the Study Group Meeting, the Indian experience is not described in Chapters Three and Four.

Chapter One

EDUCATIONAL POLICIES

Educational objectives

AUSTRALIA

Education policies have been an expression of the government's social and economic goals. The major thrust of the present policy is increased participation and retention rates as well as accessibility to further education. This means training for the majority of the young people and the preparation of a skilled work force. It is envisioned that at the end of the decade most people will be able to complete the equivalent of a full secondary education either in school or in some combination of work and education. The young people are to be provided with a range of options in education, training, employment, and community activities with a rational income support system to help sustain them in the period of development.

In 1984 the School-to-Work Transition Programme was replaced by a new Participation and Equity Programme. The new programme – while providing young people, particularly those unemployed aged 15-24 years, with options in education, training and employment just as the first programme did – now appears to place greater emphasis on access to, and retention of disadvantaged groups at all levels of education. Changes in secondary education include catering to the needs of all types of students; more adequate accommodation of the social, economic and cultural diversity of students to promote self-confidence, independence and a sense of autonomy among them; reforming and diversifying the curriculum in particular recognition of work as an integral part of adult life; reviewing credentialling and assessment arrangements including work experience; changing and developing teacher attitudes and skills and improving the relationship of schools and community as well as community attitudes towards education.

In the technical and further education sector, there are two major aims. These are, improving the quality of vocational education to meet the needs of a changing economy and society; and improving the access to tertiary education by increasing the extent to which people from disadvantaged groups participate successfully at this level of education. This is to be done by bridging courses, particularly in mathematics, science and technology; offering multi-vocational and pre-employment courses which develop skills needed for flexibility and adaptability in the work force; greater participation in all forms of higher education; more provision of associate diplomas for those who have the ability but not the confidence to undertake degree courses; expanded opportunities in the existing range of courses for disadvantaged groups; and provision of summer schools and other support services.

Country experiences

Education policies in the different states of Australia follow similar directions with variations in focus.

CHINA

In 1981 the Ministry of Education issued two documents entitled Draft Instructional Programme for Full Time Six-Year Key High Schools and the Revised Draft Instructional Programme for Full-Time Five-Year High Schools across the nation. The aim of these programmes was to produce a new generation of well rounded individuals, morally, intellectually and physically. The young should be equipped with the proper attitude to and the habit of doing manual labour, basic production and work skills as well as mental and manual competence to be prepared for further education or work life. The labour programme was also introduced in grades IV and V of the elementary schools. This institutionalized earlier efforts to incorporate productive labour education in the senior high school programmes.

With the restructuring of secondary education in 1980, different types of vocational schools emerged and at the same time manual work and technical vocational subjects were introduced to complement academic courses in the general secondary high schools.

The work-oriented education follows several guiding principles. There must be a proper relationship between the work and the academic courses in terms of time allocation and the nature of work to be done. Theory and practice must be integrated and the learner's ability to analyze and solve problems must be improved. Whenever possible, priority must be given to work that is most relevant to the academic courses. The work skills to be acquired must be relevant to the everyday life of the learners and their future participation in the modernization of the country. Finally, the content of the technical subjects in general education must be within the cognitive level development of the learner; work/labour assignments should be within the capabilities of the age level and the sex of learners; and the work place must be safe.

INDIA (TAMILNADU)

The innovative experience of the state Tamilnadu in the field of vocationalization of general education was noted by the Minister of Education in India, saying "What Tamilnadu does today, other states have to do tomorrow." Hence the example of Tamilnadu is being used in this study.

Work experience in the ten-year school curriculum and vocationalization at +2 stage in the educational system of India was recommended by an Education Commission. The vocationalization component of secondary education was introduced in Tamilnadu to:

1. provide work-oriented education which is very vital for economic development;
2. equip the youth with vocational and technical knowledge and skills besides committing them to national goals and aspirations;

3. control the educated unemployment by matching the output of the educational system to the manpower demands of the economic sector; and
4. re-orient a certain percentage of students with practical aptitudes for pursuing vocational education and thereby provide manpower for the unorganized sector of the economy.

MALAYSIA

One of the major functions of education, besides contributing to the development of personal and citizenship qualities, is manpower development. It is intended that the nine years of general education provide every child, especially those in the lower socio-economic level, opportunity to gain entry into gainful employment in the present occupations.

Since 40 per cent of those in general education leave school after the nine years, to join the nation's work force, their education must adequately prepare them to receive some form of training for productive work. This must conform to the demands of society.

The present demands which are reflective of the country's shift of focus from agriculture to industry and services require changes in manpower development. There will be a corresponding skills restructuring and work orientation that will be more suited to technology and production efficiency. The transition in this restructuring process has been the subject of several policy statements. Malaysians are to improve their work ethics and labour productivity. The youths are encouraged to take up blue collar jobs, to be more enterprising, to be more inventive and adoptive to changing situations and demands. This should put them in a better position to participate and benefit from the development schemes and job openings that development offers.

The General Education programme, therefore, has to be realigned to the new and perceived changes in the occupational structure.

PAKISTAN

Along with ideological orientations and character development, the educational policy lays stress on the promotion of scientific, vocational and technological education, training and research.

In part, the National Education Policy is to:

1. provide and ensure equal educational opportunities to all citizens of Pakistan so as to enable them to effectively participate in the overall national efforts;
2. impart quality education and to fully develop the students' potentialities with a view to building their capability to effectively manage social, natural and productive activities consistent with the value system of Islam;

3. provide functional literacy and fundamental education to all citizens;
4. create interest and love for learning and discipline among the youth and imbue them with the realization that education is a continuous and life-long process; and
5. promote and strengthen scientific, vocational and technological education, training and research to ensure development and self-reliance and to secure the future of the nation.

These objectives reflect the desire to provide quality education to all the citizens with a view to enhancing their potentials and capabilities. They aim to promote socio-economic growth and development for national self-reliance.

PHILIPPINES

All educational institutions aim to inculcate love of country, teach the duties of citizenship and develop moral character, personal discipline, and scientific, technological and vocational efficiency.

The Educational objectives stipulate that education must:

1. Provide for a broad general education that will assist each individual in the peculiar ecology of his own society to:
   a) attain his potential as a human being;
   b) enhance the range and quality of individual group participation in the basic function of society; and
   c) acquire the essential educational foundation for his development into a productive and versatile citizen;
2. Train the nation's manpower in the middle level skills required for national development;
3. Develop the high level professional skills that will provide leadership for the nation and advance knowledge for improvement of the quality of human life; and
4. Respond efficiently to changing needs and conditions of the nation through the system of educational planning and evaluation.

Secondary education enhances the achievement of the general education goals by, for example:

1. acquiring work skills, knowledge and information and a set of work ethics essential for making an intelligent choice of an occupation or career and for specialized training in specific occupations; and
2. broadening and heightening his abilities in and appreciation for the arts, the sciences, and technology as a means of maximizing his potentials for self-fulfillment and for promoting the welfare of others.

The goals of Philippine education at all levels provide for the rounded development of the potentials of the human being so that he can participate in the functions of the society as a productive and versatile citizen.

REPUBLIC OF KOREA

Educational objectives, include the cultivation of intellectual ability and skill which covers basic learning ability, scientific inquiry, basic knowledge and skill, problem solving skill and career discovery and the enhancement of the national collective awareness which connotes an awareness of the contributing members of co-operative groups. For general secondary education, the specific aims include the development of the students' physical health, the ability to select careers appropriate to their aptitudes and the enhancement of general liberal education and vocational technology. Special vocational high schools like agricultural, technical, commercial and fishery and marine high schools have added objectives specific to the area of specialization.

SOCIALIST REPUBLIC OF VIET NAM

Technical and vocational education aims to educate and train, in a uniform way, a contingent of technical workers and technicians who will meet the demands of production. This gives the youth the training needed to join the production life of the country.

The technical and vocational education system should meet the demands of national economic development and of scientific technical progress. While ensuring the necessary diversity to cope with the differences in production demands, however, the schools maintain uniformity in training plans, content and programmes, policies, financing and supply of materials and equipment. It is believed that such uniformity ensures high quality of training in all the schools.

The system produces workers of different categories: highly skilled workers who have complete theoretical knowledge and high professional skills, capable of independent and creative work as well as guiding and training lower level workers; skilled workers who have complete theoretical knowledge and high professional skills according to the demands of production but who would need new professional skills if there is any change in industrial production processes; sub-professional workers who were trained by an incomplete technical and vocational education programme but have accumulated valuable productive experience by themselves; and semi-skilled technical workers who undertake simple work operations that require some basic operational skills.

THAILAND

One purpose of education is to instil diligence and perseverance, the ability to earn one's living and spend money wisely and economically, and co-operation in conducting fair business.

Elementary education is to provide learners with basic knowledge and ability, retention of literacy and mathematical skills, ability to earn one's living, and create a good citizen through the democratic system with the monarch as the head of the country.

Country experiences

Secondary education aims to provide learners with academic and vocational knowledge suitable to their age, needs, interests and aptitudes so that each learner is able to choose a useful career for himself in the future.

Vocational education, in conformity with economic and social conditions, shall be given wide government support both in the form of integration with academic content at each educational level and independently as the needs arise, emphasizing agricultural and industrial knowledge. The government shall arrange and promote secondary education in such a way as to ensure equity and conformity with economic and social needs of the country, including the provision of work experience for the learners.

The national plan and the objectives themselves are modified to correspond with the country's ever changing economic and social conditions.

TURKEY

A special objective is to:

1. To train all individuals of the Turkish nation as citizens devoted to Ataturk reforms, the constitution, cultural values, human rights and the Turkish Republic in the form of a democratic social and legal state.
2. To train physically, psychologically and morally healthy individuals so that they can be independent minded, creative and productive.
3. Develop in all individuals the interests, abilities and aptitudes to prepare them for occupations which will render them individually and socially contributive to and participatory in the economic developments of the country.

It is apparent that there is emphasis on the inclusion of occupational training within the curricula of general education at every level of the educational system. The occupation-oriented education of the country aims to develop the potential and promote the development of the student to be able to adapt to his environment, assist in identifying and solving social problems, promote a healthy life for himself, his family and society, adopt the cultural values of the society and collaborate and co-operate with others without any discrimination.

The programme also aims to enable students to develop both manual skills and mental abilities, choose their vocations properly, contribute to economic development, use proper materials and technology, and familiarize and prepare themselves for business life. It is expected that their education is in line with their abilities and interests as well as compatible with the values of the society in its economic orientation. Education will keep pace with the fast developments in science and technology and provide continuous development and progress in the students. Achievement is to be continuously monitored as part of the educational development programme.

Emphasis on work oriented education including occupational training within the curricula of general education is evident at every level of the educational system.

The occupation-oriented education aims to develop the potential and enable him to relate to his environment, assist in identifying and solving social problems, promote a healthy life for himself, his family, and society, adopt the cultural values of the society and collaborate and co-operate with others without any discrimination.

Educational Structures and Content

AUSTRALIA

Most children start schooling at about five years of age. They are graded chronologically and complete their primary education after six or seven years. The programme consists of language, arts, mathematics, elementary science, music, arts and craft, health, physical education and optionally: religion and moral education.

Secondary education, which lasts up to five years, is a comprehensive programme with a wide range of subjects being offered. Formerly, senior secondary education was oriented towards entry to higher education, but in recent years some new subjects were included to prepare students for a wider range of destinations and increase their level of awareness about the world of work. This provides them with options in education, training, and employment or any combination of this, either full time or part time. In 1980, the secondary curriculum was given a new orientation for those who do not wish or are not qualified to pursue the traditional academic curriculum. The new offerings include legal studies, professional typing, stenography, technical drawing, and design agricultural studies accounting business studies and transportation. This is a recognition of the need for work as an element of the general education programme that prepares the students for adult life. The basic subjects such as English, social studies, mathematics, science, physical and health education and arts continue to be offered.

The technical and further education sector provides an alternative educational pathway for young people over the age of 15. Pre-vocational courses are offered in a wide range of occupational areas, including automotive, electronics, building construction, food preparation, clothing, printing and metal fabrication. These courses are designed to prepare students for further vocational training or employment in several related occupations. A general education component which includes personal development, career education, computer awareness, health and recreation is part of the training in vocational skills common to a number of related occupations.

CHINA

The educational system makes primary and junior secondary education compulsory for the seven to 16 years old population. After this they may go to three-year senior technical, general or vocational high school or a four-year special high school, graduation from which entitles them for entry to the university or technical college or the labour sector.

In 1958 the Ministry of Education required that productive labour education be incorporated into senior high school programmes. In the same year the Central

Committee of the Communist Party of China and the State Council found it necessary to offer productive labour education as a regular course in all schools. This brought about the inclusion of industrial or agricultural production basics as an instructional component at all general elementary and secondary schools.

In 1981, the Ministry added that a labour programme should be included in elementary grades IV and V, and work and technical subjects be offered in high schools. Specialized vocational high schools like agricultural high schools, vocational high schools, secondary professional schools and secondary technical schools had already been organized.

Today, after much hard work, the general high schools have been restructured into two groups:

1) Those whose academic courses are complemented with work and technical subjects (48 sessions at the junior high level and 144 at the senior high level each school year), to provide students with fundamental knowledge of production and initial work skills; and

2) Those vocationalized high schools that integrate general education with vocational education. These vocational schools are of two types: the agricultural vocational senior high schools in rural areas and the vocational senior high schools in urban areas.

All these schools provide training with a proper balance between work and academic courses, the integration of theory with practice, relevance of skills to local conditions and work safety.

INDIA (TAMILNADU EXPERIENCE)

Secondary education has long been envisioned as practically useful to the people in their different spheres of life. This meant the inclusion of vocational education at secondary level of general education. The early efforts were to bifurcate secondary education into two streams: one that would lead to the university entrance examination and the other to prepare the youth for commercial and non literary pursuits. Progress was, however, slow.

In 1964 an Education commission recommended a 10 + 2 + 3 national pattern of general education, with work experience in the ten year school curriculum and vocationalization at the +2 stage. This was further strengthened in 1977 when a national working group recommended vocationalization at this level to be both terminal and continuing. Opportunities for vertical and horizontal mobility as well as apprenticeship, vocational guidance and counselling were also provided. The following vocational courses are offered: agriculture and related vocations business and office management; paramedical training; educational services; local government and other services; journalism; home science related vocations and other general services.

Tamilnadu implemented the recommendations of the Commission and introduced the 10 + 2 + 3 pattern in June 1978. The +2 programme consisted of science

humanities and vocational courses. The first group of subjects included physical sciences, mathematics, social and political sciences, philosophy, psychology, logic and a choice of any one of the advanced studies and Siddha. The vocational courses were classified into six areas: agriculture, home science, commerce and business, engineering and technology, health and miscellaneous. This comprehensive programme is still being implemented.

MALAYSIA

The primary and lower secondary school curricula provide sufficient overall general education preparation in the English and Malay languages science and mathematics, social studies, religious knowledge and civics, arts and pre-vocational studies.

There is now a new emphasis on the mastery of the English language, appreciation for the finer qualities of things in life, development of abilities in planning, designing, and production of work items and development of interest and desire to practice these skills and knowledge in a productive manner whether for occupational or recreational purposes.

In the existing lower secondary curriculum, students can pursue only one out of four elective pre-vocational courses: industrial arts, commerce, home science or agriculture. The Ministry of Education is now reorganizing this learning area so that the very important elements and basics of the four electives can be made available to all students. At the same time, special emphasis is provided for manipulative skills development and enterpreneurship orientations from primary to secondary education. Physical and psychomotor development is given new focus in subjects like music and manipulative skills at the primary level. This will continue to be developed in subjects like Arts and Crafts and Physical Education.

In the area of personal and social skills, such abilities as socializing with others, establishing rapport, coping with stress and strain, are developed along with traits like creativity, inventiveness, imagination and proper work ethics. In the secondary school curriculum functional skills which students can see as relevant and therefore directly applicable in their daily lives and in their world of work in the future are emphasized. Co-curricular programmes are also utilized more extensively to develop personal social skills and work ethics for greater efficiency.

PAKISTAN

Starting from the primary school which is for children aged from 5 to 9, the programme of studies includes languages (first and second), mathematics, science, social studies, health and physical education, Islamayat, arts, tree planting/manual work. Some subjects like mathematics, science and arts, Islamayat, and social studies are given more attention than the others. Health and physical education and tree plantation/manual work are not given sufficient time. In these subjects, no examinations are administered so that the implementation of these subjects depends mostly on the teacher and the availability of facilities and equipment.

Country experiences

At the middle school of junior secondary level English, arts/arabic/persian and agro-technical education are added to the subjects being required. These VI to VIII classes cover the age group from nine to eleven years. The emphasis at this level is on language and agro-technical education. This was introduced in pursuance of the 1972-1980 Education Policy which suggested the integration of agro-technical with general education. This was due to the failure of the separate technical education institutions to produce the efficient workers that they were expected to train. The programme lacked the necessary cultural content and in general it catered to those who were not admitted to the general education stream. Science, mathematics and social studies have been allotted less time at this level.

PHILIPPINES

The first level of a three-level structure is a six-year basic general education for the seven to 12 year olds. The second is a four-year secondary level general education for the 13 to 16 year olds. There are also special schools that offer high school education with focus on a specific areas like vocational education, science and arts. Graduates of high schools are qualified to take the National College Entrance Examination for entry into four-year and higher college courses. For two-year post secondary courses, this is not necessary.

The first two levels offer a general education programme with the first placing emphasis on basic skills development and the second focusing on the use of these skills for the acquisition of more knowledge, values and more advanced skills. The new curriculum at the first level includes elementary science, mathematics, English, Pilipino, social studies, physical education, music, arts, home economics and livelihood education, the last being introduced in the fourth grade. At the secondary level, the general education continues with a renaming of some subjects to reflect new foci as Science and Technology, Home Management and technology, physical education, health and music and two new subjects that show the thrusts of the new curriculum: values education and work experience. English, Pilipino, social studies and mathematics, although given the same nomenclature are, like all the subjects of the curriculum, content, technology and values oriented. The new curriculum has been proposed to meet the demands of the graduates of the New Elementary School Curriculum.

The general education programme that starts at the elementary school and extends to the secondary school exposes the Filipino to language, the sciences, arts and work education. Within the subject components, his cognitive, affective and psychomotor skills are developed to prepare him for tertiary education or for the world of work.

REPUBLIC OF KOREA

The educational system is made up of six years of primary education, three years of middle school, another three years of high school, two to three years of junior college, and a four-year college or university course.

Although vocational orientation courses such as practical arts in primary school and industrial technology, general agriculture, industrial arts, general commerce, fishery and general home economics in middle school and academic high school are offered, the vocational and technical education actually begins at the high school, particularly in the vocational high schools.

The curriculum of vocational high schools was developed in what is called the apple tree model. The root system is the base that develops citizens in the society through general education. Above this is occupational education which develops citizens for the world of work. There are common skills and abilities for all occupations; those needed for occupational clusters and those needed for each occupational job and task. The system results in providing the students with entry level competencies for various occupations. This is achieved through a close relationship between general and occupational education, a transfer of learning through an emphasis on the structure of knowledge and the combination of subject matter, job analysis and functional approaches.

Vocational courses offered in the general high schools are in the following areas: technical, business, agriculture and homemaking. The vocational classes in these schools are a measure of solving the problem of the limited opportunities for higher education and provide for the basis of career development and various types of productive skills. The courses which are related to job opportunities can be mechanics, drawing, radio/TV repairing, car driving and car maintenance.

In the high schools attached to industries, young persons who are already working but have not had a high school education are given this opportunity on the job. The advantages of this scheme are:

1) It provides equal opportunity for all to acquire a high school education;
2) It increases the productivity of the worker through education;
3) It enhances the esteem and morale of the employee in industry; and
4) It strengthens the co-operative work experience programme.

The students take the same subjects as in the regular high schools but the time allotted is less. This is one of the criticisms against it.

SOCIALIST REPUBLIC OF VIET NAM

The educational system consists of a three-year pre-school education for the three to five year olds; a basic eight-year education and special talent training for the six to 14 year olds; followed by a three-year secondary education or vocational education; and university or college education of four to six years or a vocational secondary school of two to three years. If students leave school after the basic education or the secondary education programmes, they may go directly into the world of work.

The main part of the content of the curriculum for secondary schools is a general education programme that provides learning in all the subjects: literature,

mathematics, history, geography, political science, aesthetics, foreign languages, physics, chemistry, biology, general techniques and gymnastics. In all the subjects general technical education and vocational orientation are integrated so that they can make definite impacts on the vocational education of the students.

The General Technology course is comprised of: industrial techniques, agricultural techniques and needlework techniques. Each subject area however, includes education in economic management. The programme stipulates a compulsory and an optional component. The technical component is obligatory but not the technical education on local traditional trades, productive labour and trade guidance. Although the first is obligatory, choices of subjects are available. In grade X engineering or carpentry can be taught, in grade XI, combustion-engine or shape and site recognition can be taught, in grade XII electric or electronic techniques and the selection of the specific plants and animals in the localities within the content of agricultural techniques can be taught.

Although the general technology subject has the most practical usefulness for preparing students for trade labour, the other general education subjects which integrate work experience make their own contributions. Extra-curricular activities, likewise, provide an enhancement of what is learned in the classroom curricular activities. The productive labour activities in the senior secondary schools, on the other hand, help students consolidate and apply the fundamental knowledge and skills acquired and to make them well-balanced individuals and workers.

THAILAND

The 1977 National Education Plan for the formal education system in Thailand starts with a pre-primary level for the three to five year-old children, primary for the six toll age group, lower secondary for the 12-14 age group, upper secondary for those aged 15-17, and college undergraduate and graduate level for the secondary school graduates. Alongside is the non-formal education system for all ages. In 1978 education was made compulsory for all eight year old pupils who were required to stay in school until the age of 15. Some exceptions to this were children who had already completed Grade VI, those living more than 3km away from the nearest school providing free education and those who could not attend school for unavoidable reasons like severe illness or where the village cannot provide compulsory education for all.

The 1978 primary school curriculum consists of four categories of subjects: tool subjects, life experience, character development and work-oriented education. The first includes Thai language, mathematics, arithmetic, geometry and statistics. The second covers biology, chemistry, physics, social studies and family life. Character development includes moral education, physical education, art education, music and movement and character development activities. Work-oriented education consists of housework, agriculture, art and craft.

At the lower secondary level, the following subjects are offered: language, science-mathematics, social studies, personality development and work-oriented or vocational subjects. The last is divided into the compulsory work education and

the optional vocational education courses. Work education aims to instil in the learner good habits of work as well as knowledge of work processes. The subject consists of housekeeping and maintenance, handyman's work in the home, agricultural work, clothing and embroidery work and food and nutrition. Vocational education aims to provide sufficient occupational knowledge and skills for self-employment. This is composed of agricultural work, industrial work, home economics, business, music and dance. In addition, schools can also offer vocational courses that are related to the local economy and society.

At the upper secondary level, there are two groups of compulsory subjects: 24 units consisting of Thai language, social studies, health and physical education, and science and 12 units of basic vocational subjects to be chosen from industrial arts, agriculture, home economics, commerce, arts and crafts and art education. In addition, each learner has to choose a number of optional subjects from a list of approved subjects that includes Thai language, social studies, health and physical education, science, mathematics, foreign languages, industrial arts, agriculture, home-economics, commerce, arts and crafts, art education or other approved courses. Since 1981, schools are allowed to also offer optional vocational courses as specified by the Ministry of Education's criteria for the Certificate of Vocational Education.

TURKEY

The Turkish educational system consists of pre-school education for the three to six year old children (not compulsory), primary education for the age group seven to eleven, junior high school education for those aged 12-14, high school for those 15-18, and higher or university education. Primary education has been extended to eight years. There are plans, in fact, to modify the system into an 8 + 3 + 4 programme instead of the present 5 – 3 – 3 – 4. This is considered essential as a step forward when 90 per cent of the primary school age population have gone through the 5-year primary schooling.

Primary and junior school education is considered as basic education. It starts with Turkish, mathematics, life and environmental activities in the first three years; activities of general knowledge and skills and work activities for the next two years and more advanced activities of general knowledge and skills with work oriented activities at the junior high school level. The subjects at this level of basic education include at least language, mathematics, science, social studies, foreign language, arts, religion, physical education, technological education which includes home-making, business, typing, and industrial fields. The junior high school produces a worker who still needs apprenticeship training to qualify for the lower level operations.

Secondary education has three streams: the General Lycee, the Technical Lycee and the Vocational Lycee. All three streams graduate students who are qualified to work as technician workers. The non-formal delivery system for secondary education provides training in practical trade schools, vocational training centres and apprenticeship training.

Summary

The objectives and content of general education in Australia, China, India (Tamilnadu), Malaysia, Pakistan, Philippines, Republic of Korea, Socialist Republic of Viet Nam, Thailand, and Turkey all reflect each country's aspirations to produce well-rounded individuals equipped with knowledge in the traditional disciplines, proper human and social attitudes as well as general vocational skills. In both the elementary and secondary levels, whether composed of a 6 – 4, a 6 – 5 or 10 + 2 + 3 structure, the programmes include both academic and vocational courses. Although the objectives of education in all countries include objectives in the affective domain, these are evidently generally concomitants of the cognitive and psychomotor development of the learners. No specific subjects are commonly offered, but individual countries do this in the form of moral education in Korea and Australia, where this is optional, Islamayat in Pakistan, personality development in Thailand, optional religious instruction and a proposed values education subject at the secondary level in the Philippines and religion in Turkey.

Chapter Two

OCCUPATIONAL TRAINING AND RETRAINING

Vocational training and retraining programmes are generally conducted for those who seek entry into specific occupations or are already employed. These may be young people who have graduated from elementary or secondary schools but have the opportunity to immediately join the labour force. They need training in specific skills for the job. Others may be adults or high-school-age workers who are given education through on-the-job training to enhance their productive skills. The type of training given to the workers depends on their needs, their level of basic skills and their educational achievement. Specific training programmes may have specific requirements but, in general, they cater to anyone who is willing to be trained for a job.

Country programmes and admissibility

AUSTRALIA

Training programmes. The Federal Government has given high priority to Technical and Further Education (TAFE) within the tertiary education sector to improve the quality of the skills of those in the work force and to improve the access of disadvantaged groups, particularly the young unemployed. Pre-vocational courses have been implemented to provide young people with immediately usable vocational skills and to facilitate their involvement in further vocational education in the tertiary education sector. These courses are mainly presented in the apprenticed occupations. An apprenticeship training scheme has also been introduced by the Australian government to encourage 16-18 year olds to participate in training for the semi-skilled occupations (e.g. shop assistant, furniture removalists, clerical assistants). The curriculum design of the above training schemes is based on the principle of broad-based training, i.e. initial skill training.

A participation and equity sub-programme provides a variety of courses to help young people adjust to the world of work and to acquire skills and knowledge to compete effectively for employment or for further education. A fundamental design principle which has guided the development of the courses in the sub-programme is that general skills obtained either in secondary or post secondary remedial programmes are an integral part of the acquisition of vocational skills. They assist in the mastery of occupational skills.

Educational programmes for unemployed youth have been designed to enable young people between the age of 15 and 24, who are disenchanted with educational institutions, or have poor employment history, poor basic education levels, limited social skills, and have perceptions of themselves as failures, to be more

competitive in the labour market. The programmes concentrate on the development of the students' analytical skills and the development of their ability to impose relevant structure on their total environment. Students acquire general skills that enable them to compete for and retain employment or progress to more specific job skill training and increase their knowledge about work and the work environment. These programmes offer mathematics that covers basic core, consumer mathematics, geometry, algebra, trigonometry and new mathematics; communication and personal development made up of group perception and communication, a sense of self and relationships and a work education curriculum that covers a continuum for work preparation: self-awareness, preliminary skills, initial goal settings, options, work and reasons for work, self analysis and skills in the investigation of specific job areas, social roles, the job-getting process, job holding, industrial conditions, further education, self-employment, unemployment, voluntary work, skills for obtaining information, clarification, assessment, application.

Foundation courses attempt to provide knowledge and experience in a range of industrial activities so that students can explore their interests and abilities and make a choice of a vocation. The unemployed youth are given an opportunity to study the nature and entry requirements of a wide range of occupations, and gain some relevant hands-on experience so that they may make more realistic career and study choices. The course has three sections: common strand, introductory studies and on-the-job training. The common strand consists of assertiveness training, budgeting, career and work education, communication skills, educational opportunities in TAFE, first aid, grooming and deportment, health, physical education and recreation, human relations, self-defense, safety practices. The introductory studies is a conglomeration of all different types of occupations from child care, food service, aged care, to building and construction, computers, electrical engineering, metal work and others. On-the-job training could be offered for any of these occupations.

Vocational preparation courses have been designed to increase the employability of young unemployed people by providing them with an understanding of a family of related occupations in a specific industry and basic skills related to a range of occupations in that specific industry. Young people improve their chances of selecting the relevant area of employment and successfully getting employment and retaining employment. Industrial sectors in which vocational preparation courses have been offered include: food and bar service, rural workers, fish processing, dental studies, roadhouse attendant, health auxiliary, chainsaw operators, council trainees/job, industrial machining, industrial skills, warehouse operations, retail sales, industrial cleaning, house hand, plant operators, remote areas opportunities, general agriculture, introduction to technology for young women. In general, the courses provide the participants with training in suitable work habits and attitudes towards job seeking, general career orientation, some broadly-based occupational skills in a particular industry, vocation related literacy and numeracy skills and further study options.

Secondary School/TAFE Co-operative Programmes used to be called 'Link' courses. These are part time courses usually conducted within a TAFE college for

secondary school students who are at least 15 years old. These courses have served as career education programmes that introduce the student to the world of employment provided specialization for a specific vocation qualification and have been regarded as a co-operative between host college and client school. Joint planning by secondary schools and the TAFE colleges take into account the changing nature of the environment and the concurrent need for flexible and adaptable people to cope with rapid technological change and therefore their exposure to a wide spectrum of career development knowledge, skills, attitudes and values.

Training and retraining courses in Australia have a number of common components within the courses offered. These are the basic skills of literacy, numeracy, decision making, problem solving and social skills; personal development, vocational orientation, vocational skills development and application and work experience for skill enhancement. The emphasis placed on any one component varies according to the students involved, the length of the course and the educational and employment directions the students might be taking.

Many persons, particularly those from the mature-aged group will require retraining as a result of structural changes in the economy. Some of these people will need to further develop their general education skills before acquiring new vocational skills. The technical and further education sector provides remedial general education courses for adults (e.g. literacy and numeracy) and vocational language classes for migrants. Some TAFE Colleges also offer upper secondary school subjects for adults who wish to obtain the necessary requirements, for entry to higher education institutions. Labour Adjustments Training programmes are conducted to assist displaced workers to acquire new vocational skills.

Admissibility. There are usually no educational requirements specified for entry to common basic trade courses offered by the technical and further education sector. However, Year 11 general education standards are indicated in many cases as minimum entry requirements.

Technician level courses usually require either Year 11 or Year 12 general education. Some courses specify successful completion particular senior secondary school subjects, e.g. Associate Diploma in Electronics requires Mathematics, Physics, Chemistry and English and Year 11 standard. Others have identified particular personal attributes for student entry to the course e.g. Dental Hygiene Certificate requires that students demonstrate both oral and written communication skills, sensitivity and empathy towards patients and professional attitudes towards the practice of dental hygiene and management of patients. A number of other entry criteria like completion of other specific occupation courses, successful interview and work experience are required in some programmes.

Graduates from pre-vocational courses are able to obtain educational credit for a large population of the first year of study for the next level of an award course.

CHINA

Training programmes. There is great diversity in instructional programmes, curricula and instructional content for the over 400 areas of specializations offered in the vocational/technical high schools across the nation. Differences in production technique levels among different districts also impose different instructional requirements. Improvement has been achieved in some areas through the formulation of unified programmes and curricula under centralized leadership.

The vocational high schools generally aim to produce primary-level skilled workers and a senior high education as well as the rudiments of the trade or vocation and functional operating skills in the related production and technological processes.

The courses are categorized as professional basics course and professional course. The first includes politics, physical training, Chinese, mathematics, biology, physics, chemistry. The aims and content of the subjects are similar to those of the academic senior high schools with some varieties depending upon the area of specialization. The purpose is to provide the students with the academic tools for the immediate acquisition of both the professional basics and the professionals as well as to prepare them for future exposure to science and technology. The professional basics enable the students to acquire the rudiments of a specific occupation, know the materials and the usage of necessary equipment and to learn safety in the use of various tools. The professional courses give the students specialized technical training with more practice and site work. The students also acquire a high level of ideology and a strong sense of work discipline after taking part in production labour. They develop an unswerving professional ambition, a strong sense of responsibility, a high level of skills, and the ability to master new skills.

The graduates of the vocational high schools are now recognized and easily find employment in the factories. There are vocational schools for cotton spinning and weaving, electrical engineering, agricultural technology, agronomy, fishery, machinery and other courses.

China also provides for the retraining of young and adult workers and peasants. The training includes ideological education and academic and technical remedial education. The aim is to enhance the quality of workers and keep abreast of the goal of modernization as stated in 'The Decision to Strengthen Workers' Education' issued by the Central Committee of CTC and the State Council in 1981. This gave rise to the organization of various kinds of workers schools and short-term training classes in factories and enterprises in different parts of China.

The contents and requirements of the workers' education are stipulated clearly in the decision. In the ideological component, they are educated to foster a lofty communist ideal and socialist consciousness to protect the state property, to strengthen labour discipline and display enthusiasm, initiative and creativity. The academic component seeks to eliminate illiteracy within three years from 1981 and raise the educational level of the workers, so as to be able to master the knowledge of new scientific technology and modern administration. For production skills, the

workers are to organize to study technical theories, technological processes and rules, and operation skills so as to become qualified for their work. In this way, the proportion of senior and middle level technical workers should increase considerably within five years from 1981.

Spare-time, part-work-part-study or full-time-study programmes have also been organized for workers. These offer ideological education and academic remedial courses of junior middle school and elementary skill courses. In 1984 when it was felt that remedial education has been completed up to this level, courses of senior middle school, specialized secondary school and secondary technical school were to enable the workers to further raise their educational level and master the specialized technical knowledge needed in their work. For this purpose and in addition to remedial courses, full-time workers' universities, workers' spare-time universities and the Central Broadcasting-TV University have been established. Correspondence universities and evening universities sponsored by the institution of higher learning have been restored.

At present, because the jobs and workers' educational levels in various enterprises or factories are quite different from each other, training courses vary. However, the general principle of the workers education is that it should be in accordance with the production demands and the state of workers' educational and technical level, and theory should be integrated with practice. It is envisioned that by the end of the century all the young people of the rural areas would have received professional education to be able to keep abreast of development and put China on a high level of technology utilization.

Admissibility. Since the training programmes are geared to the achievement of specific educational goals within a five-years period, they are adapted to the specific levels of the trainees. Elementary school graduates are provided with middle school programmes; middle school graduates are given secondary education programmes and adults are trained to acquire the knowledge and skills required for educated workers. Hence, mass training is necessary and the programmes meet the needs of trainees at different levels. Admission is for all.

INDIA (TAMILNADU)

Training programmes. Vocational training was introduced in the higher secondary course in July 1978 as one of two broad streams at this level, the other being the academic course. The vocational courses offered were previously identified by a special committee through a survey of various geographical areas. The survey determined what the current available occupational skills were and what the requirements of the foreseeable future would be. It was recognized that middle level personnel have limited mobility, and therefore, the youth of a geographical area should help to convert the existing and emerging situations into gainful employment or self employment.

The survey team interviewed heads of various departments, managers of industrial concerns, farm managers, heads of public undertakings, leaders of educa-

tional institutions to gain ideas and opinions on designing courses that would prepare the students for available employment. The vocational courses that were designed fall under six vocational areas: (1) agriculture; (2) home science; (3) commerce and business; (4) engineering and technology; (5) health; and (6) miscellaneous vocations.

Subsequent visits to higher secondary schools offering these courses show the variations of the courses offered in the different areas. In some schools the focus is on agriculture and commerce and business; in others, particularly in schools for girls, there is a greater interest in dressmaking, child care, food preservation. In some areas textile technology, auditing, nursing are offered. In general, there is close interaction between the school and the industries in the area. In areas where the computer has invaded most industries, computer programming is offered. Part time teachers are hired although it is generally felt that full time teachers must co-ordinate the programme. A monitor from among the students is employed for each area and given a small amount as incentive.

The graduates of the vocational course are prepared for the higher polytechnical colleges and for entry in the occupation sector. It is noteworthy that the greater number of graduates go to college with a sizeable percentage becoming self-employed.

The Tamilnadu experience in Higher Secondary vocationalized education is largely a result of a big wave of popular enthusiasm for 'relevance in education'. The people are keen on providing a useful education, linked to productivity and employability at the +2 level. The heart of the vocational course is the practical component. An amendment to the Apprenticeship Act was, therefore, recommended to make it obligatory for the production and service establishments to extend the apprenticeship facilities for vocationalized education students. It was also suggested that the Department of Employment and Training provide career guidance services for these students, since it has the requisite built-in infrastrutural facilities.

In spite of an undercurrent of resistance to vocationalized education in the traditional cultural set-up of the country, Tamilnadu had during the 1984-1985 academic year 1969 out of 1421 Higher Secondary Schools offering a total of 1432 vocational courses with 19 per cent of the total population of this level in the vocational stream. The courses, so far, cover the following fields: 1) agriculture including agricultural chemicals, agro-based industries, crop production, dairy, fishery, floriculture and medicinal plants, farm mechanics and post harvest technology, poultry rearing, plant protection, sericulture and agriculture, small farm management, growing vegetables and fruits; (2) home science areas like child care and nutrition, dressmaking, dress designing and making, dietetics, nutrition and food preservation, textile designing, dyeing and printing, catering; (3) the commerce and business group which includes accountancy and auditing, banking, business management for small scale industries, co-operative management, marketing and salesmanship, office secretaryship, materials management, insurance; (4) the engineering and technology group which covers electrical domestic appliances repair and main-

tenance, electrical motor rewinding, general machinist, radio and television repair and maintenance, textiles, composing and printing technology, computer programming; (5) the health group courses that cover hospital housekeeping, musical laboratory assistant, nursing, dental hygienist, opthalmic technician; and (6) the miscellaneous group of courses that cover music, Bharathanatyam, photography, tourist guiding, advocate's assistant.

It is expected that other states in India would learn from and adopt with necessary modification, the Tamilnadu experience.

Admissibility. Since the vocational training programme is part of the formal educational system, the requirements for admission follow the requisites scheme for the different levels of education.

MALAYSIA

Training programmes. Occupational training and retraining programmes take in school leavers who have completed their general education and prepare them for specific skills in both the skilled and semi-skilled categories that are required by the major sectors of the economy.

One such programme is conducted by the Institute of Hotel and Tourism Management of the National Productivity Centre. It seeks to develop trained manpower to contribute to the professional growth and productivity of the hotel-restaurant industry. The courses are conducted both at the institute and in an adjacent hotel which provides the working environment for the trainees to operate. There is an apprenticeship training programme, a hotel restaurant supervisory certificate programme and other types of training that provide skills training, theoretical and practical knowledge, productivity consciousness, supervisory skills and the exchange/dissemination of ideas in hotel and catering operations.

The Ministry of Culture, Youth and Sports also provides vocational training programmes in training centres located in different parts of the country. Having as the target group the unemployed youths, these programmes not only aim to make the youth employable or able to start their own businesses but also to start and run youth clubs and organizations and be useful citizens. Para-military discipline with civics, religion and sports are important components of this training. This is intended to instil loyalty towards the country, to encourage 'esprit de corps' and to inculcate efficiency, cleanliness and trustworthiness. Vocational training is provided in different areas like motor vehicle maintainance, building trades, agricultural courses and others. Courses are also privided for youths to undergo general business and commercial training to enable them to start their own business.

Industrial training institutes are also managed by the Manpower Department of the Ministry of Labour and Management. The training programmes consist of apprenticeship training, preparatory trade courses and skill-upgrading courses. The first two cater to school leavers and unemployed youth while the third is a re-training for those employed in various industries. The training consists of both institutional training at the institute and in-plant training in the employer's establishment.

Country experiences

The Armed Forces Training Scheme is a comprehensive training programme encompassing all levels beginning with the training of ordinary soldiers, the cadet officers and that of the more advanced staff training programmes. The aim is to develop a corps of competent soldiers at all levels and areas of army service, to help them move up the ranks, and to help resettle retired soldiers to enable them to return to civilian life with minimum trauma. Besides the regular infantry training, a soldier can undertake more specialized skills/trades in military service like signal, electrical and mechanical, and medical transport. Opportunities are also provided by skill training centres in various parts of the country.

Admissibility. In all the training programmes literacy and numeracy are required. A quick survey of the major occupational training schemes in Malaysia indicate that currently, a completion of no less than lower secondary education appears to be the minimum entry requirement for these training programmes. The level of academic achievement or intelligence, however, is not of very high priority although it is becoming more important with the need to use modern tools and equipment for vocational as well as military activities. Greater importance is attached to the applicants' personality, physical appearance and their general knowledge. It is important that they have no physical and mental handicaps and do not have any criminal records.

In the hotel and restaurant training, personal and social skills are given high ratings. The display of courtesy and good manners, ability to speak clearly and with confidence and skill in the use of English are considered assets. Traits like consciousness of hygiene and sanitation, being sensible, attentive, observant, able to assess situations and react accordingly are considered important. These are variously stressed depending on the types of learning.

The other training centres likewise consider personal characteristics and social skills, strong background in religious knowledge and civics, working knowledge of English, ability to do simple calculations as important. The willingness to work hard and get ahead in life, and being physically and mentally healthy to do so are also considered necessary.

For military training, several personal traits like a strong sense of survival, courage, endurance for hardship as well as possessing a sense of daring and adventure are considered crucial. The ability to lead a disciplined life, a strong patriotic spirit and desire to be of service to King and country are highly desirable. A strong sense of selfworth, self-reliance, confidence, emotional, psychological and physical fitness, a good mental attitude, religious faith are considered essential to enable the trainee to carry out his duties.

At school, the trainees consider each subject having specific use. They give more importance to other subjects only depending on the nature of their training. Science, mathematics and English are generally considered useful. For the military, however, the social sciences are deemed more useful. Co-curricular activities are necessary for developing social skills.

PAKISTAN

Training programmes. A National Vocational Training Project was launched to fill the need for skilled workers within the domestic labour market that came about with the migration of skilled workers to the OPEC countries in the Middle East. The craftsman level training was streamlined, the criteria for admission clearly spelled out and attempts for standardization made by the Government Vocational Institute and Technical Training Centres. They were brought under the umbrella of the National Training Bureau of the Ministry of Labour, Manpower and Overseas Pakistanis.

The National Training Bureau has developed a curriculum for all trades which is followed in all Technical Training Centres and vocational institutes in the country. Some areas of training for tradesmen are for mason, carpenter, plumber, steel fixer, electrician, A/C electrotechnician and refrigeration mechanic, welder metal worker, auto electrician, civil draftsman, civil surveyor, auto mechanic and earth moving equipment mechanic. The programmes envisage intensive, practical and skill oriented training. Only 25 to 30 per cent of the time is devoted to theoretical instruction; the rest is spent on practical work.

These programmes provide an alternative to technical/vocational education which are school based and are part of the government set up. There are diploma level courses of three years organized in Polytechnic Colleges/Institutions of Technology. Graduates are expected to fill supervisory positions in industrial establishments or in technical services like accountancy, secretarial practices and bookkeeping. This is mid-professional training equivalent to upper secondary stage. The craftsman level training is for skilled workers at the level of operators like carpenters, masons, mechanists, welders and electricians. A pre-vocational level programme encompasses all courses introduced below matriculation level in various institutions with a view to acquainting the students with elementary production-oriented training in the middle and high schools.

Vocational training institutes for girls have also been organized to assist the 48 per cent female population of which only 8 per cent are members of the labour force. Designing middle-level technical education for the female population has been increasingly appreciated and a number of women's polytechnic schools are being set up to meet this need for job training. Newer and traditional disciplines are being introduced to diversify the job opportunities for girls and adult women.

Certain programmes are also administered by public sector organizations for training skilled manpower tailored specially to their needs. They are essentially oriented to specific jobs in the organizations like steel mills, railways, Karachi Shipyard, Health Department, Agriculture Department and animal husbandry. In the private sector, technical training is offered in privately registered technical institutions, or private unregistered institutions.

Admissibility. The trainees in the different programmes should be 16-35 years old and should have acquired an class 8 pass except for electricians, radio and TV mechanics, radio and air conditioning mechanics and draftsmen for which trades

the entry requirement is class 10. The Junior Secondary Certificate is, therefore, a requirement. A relaxation of this requirement is made for carpentry and tailoring in some places. For all programmes however, the ability to read and write is needed.

PHILIPPINES

Training programmes. Outside the formal school system, various courses are offered by agencies like the National Manpower and Youth Centre (NMYC), skills training programmes in private schools and other ministries like the Ministry of Social Services and Development, Agrarian Reform, and Labour. These are service oriented as well as production oriented courses. The first are generally of three months duration, the second of six months.

Some of the service-oriented courses are those for prospective waiters, chambermaid/roomboy, bartender, radio mechanic, animal caretaker, rice mill operator, nursery aide, tile setter, bricklayer, welder, carpenter, mason, deckhand, glass installer, automotive painter, vehicle services, mechanic and blacksmith. All courses seek to bridge the gap between the behaviours of those who are presently in these different occupations and those who are expected to render the best service in them. Service-oriented programmes are intended to assist in the employment of the trainees according to demands not only in the country but also abroad. The training, therefore, includes the acquisition of knowledge of the duties and functions of the service sector, of the rules and regulations governing these functions as well as the skills necessary for the performance of such functions. In most of these occupations, the employers require proper communication skills, personality, work values and efficient work skills and habits.

Production-oriented training includes dressmaking, tailoring, practical carpentry, practical electricity, ceramic designing, ceramic mold making, ceramic decorating, horticulture and gardening, fishery, handicrafts, food preservation, cooperative store keeping and master fisherman courses. These programmes are a direct response to the local requirements to speed up the economic recovery of the country. The development of skills needed by upcoming entrepreneurs who have responded to the call of government is a concomitant demand of the situation. Training programmes have therefore responded to this.

The Bureau of Women and Minors of the Ministry of Labour and Employment also assists in the training of the rural youth. Pilot training youth centres have been organized to increase the accessibility of youth related programmes, activities and services to the clientele. Skills training programmes for women have provided training and assistance to the women in launching small scale business projects. To the unemployed women and youth, a communal fare system has become a means for their engaging in productive, self-reliant activities. A Bureau of Rural Workers has organized rural education and organization programmes, a special skills training programme, indigenous technology transfer and comprehensive transfer of management skills courses for the farmers. These are planned to provide a kind of education that would enable them to become better farmers and community members/leaders.

The Ministry of Agriculture and Food provides technology training in food production, in home extension and in rural youth development. In addition, social technology training as well as orientation on co-operative development and new directions in nutrition are given to the farmers, other rural workers and their families.

Another agency that assists in rural development is the Ministry of Agrarian Reform. It brings the message of agrarian reform to the people through community education and information and provides client education and development programmes. These are intended to make the millions of farmers in the country self-reliant and to constructively participate in the social and economic community development. A programme called Fund for Agrarian Reform Education reaches out to the farm families and helps them undertake, through group action, activities that will increase their production and improve their quality of life. Small farmers, small landowners and fishermen are trained to strengthen their organizations and be able to benefit fully from the agrarian reform programme.

The Ministry of Social Services has area centres for social welfare and development that seek to develop skills and place people in jobs. Out-of-school youth, family heads, disabled people and victims of disasters are prepared for economic productivity either through self-employment in sheltered workshops in the cottage and light industry enterprises. The clients are also provided with training in basic entreprenueral skills and the development of positive work habits. Training in hostel management may also be availed of by those who are interested in it and are completing their professional or vocational courses.

Training in entrepreneurship and businesses is the main concern of the Ministry of Trade and Industry. Seminars in wood technology, rattan and bamboo craft, ceramics, fibercraft, metalcraft and other crafts and technology related programmes are organized for the unemployed and out-of-school youth. They are given training in the skills of the trade as well as in management and organization depending on their interests and qualifications. There are business management seminars, entreprenuership seminars, organization and team building exercises in addition to the productivity courses.

The National Manpower and Youth Council gives graded training addressed to different levels of the labour force. There is a basic skills training programme for the out-of-school 15-24 year olds that aims to provide business and industry with quality trained semi-skilled workers. A skills upgrading programme in automotive diesel, welding and machine shop technology is for the employed industry worker who must meet the standards of skill performance and cope with the changes in technology, methods or required behaviour in the current employment sector. For supervisors and farmers a supervisory development programme assists them in acquiring tested skills and practices as well as develop attitudes useful in carrying out their jobs effectively. Instructors and trainers may enrol in development programmes to acquire further knowledge, skills and attitudes for the training of people at work and help them in the design of effective training programmes. Other training related programmes like planning and research, programme development and evaluation, guidance and curriculum development are offered for the professionals, the skilled

and unskilled workers. The NMYC having been mandated by law to develop the manpower resources of the country has the most comprehensive programme for training the different groups of the country's work force.

Admissibility. Competencies expected in most of the service-oriented jobs generally require graduation from secondary school while many of the production oriented jobs allow elementary school graduates to be trained. Jobs for waiters, bar tenders, chambermaids and similar occupations for example generally service clients of different types require communication skills that are therefore expected to be mastered by the secondary school graduate. On the other hand, certain production oriented jobs like ceramics, dressmaking, tailoring and carpentry focus on the production of a commodity rather than interaction with people. Manipulative competency acquired in the elementary school is expected to be further enhanced in short-term training and even on the job.

KOREA

Training programmes. There are two main tracks for vocational education – one consists of the vocational high schools in the junior colleges and the vocational training institutes attached to the various schools under the Ministry of Education and the other covers various vocational training centres like public vocational training centres, in-plant vocational training centres and authorized vocational training centres under the Ministry of Labour and other ministries.

Vocational high schools include agriculture, commercial, technical and fishery high schools. At the higher education level, there are junior vocational colleges and open universities.

Within the secondary school system there are several other schemes of vocational education besides those offered in the regular curriculum. There are high schools attached to industrial enterprises for those who are working but have not had the opportunity to acquire a high school education. The Government gives incentives by providing free tuition, shortened working time, facility of transport from the work place to school and exemption from qualification examination for college. The curriculum is quite flexible, covering general or vocational high school education for those on the job. These schools intend to give equal opportunity for education among students who are working and those who are not, to increase the productivity of workers through education, to enhance the esteem and morale of the employee in the industry and to strengthen the co-operative work-experience programme.

Similar to this is the working students' class. It operates for industrial organizations with less than 200 employees in formal or semi-formal high school settings.

Air and correspondence high schools are also part of Korea's efforts to educate workers and raise the quality of manpower supply for industry. The need for educated workers has been recognized and the different schemes organized by

government to meet this need are evidence of its belief that education is the base for the nation's raised economy.

Under the Ministry of Labour and other Ministries, public vocational training centres offer many kinds of programmes to train skilled workers. The training period varies from one year to two, and three year programmes. Authorized vocational training centres usually offer vocational programmes other than in the manufacturing fields for less than six months. In-plant vocational training centres usually train skilled workers who will be employed in their own industry.

Admissibility. Generally, the qualification for entrance to and graduation from occupational oriented education in the general high school is the same as that of the general education course. But according to the basic idea of formal and non-formal vocational education as foundation, much attention is given to widening the entrance opportunity, reducing the burden of acquiring privilege to the graduates to take the preliminary examinations for college entrance.

The vocational programmes generally require that the students should be in grade XI. The choice of which vocational programme to enroll in is the choice of the students. In high schools attached to an industrial enterprise, it is required that the workers be permanent employees in that industry. They are exempt from entrance examinations. Generally, the requirements for entry into the vocational programmes are less rigid than those for the formal high school system.

SOCIALIST REPUBLIC OF VIET NAM

Training programmes. Due to the differences in the demands of production, the technical and vocational education system is required to set up a variety of school models to train and provide learners with different vocational knowledge, from technically simple to highly complex occupations. On the other hand, the system must have a suitable model to ensure that each individual knows a trade before joining the production force. It is believed that there must be uniformity in managerial aspects like planning, training policies, finance and materials and equipment for training. This is intended for continued improvement and ensurance of the training quality.

Training programmes must produce first a group of higher skilled workers who have completed occupational theoretical knowledge and higher professional skills as a result of their accumulation of experience in production and of their increasingly improved vocational knowledge. They can work independently and creatively and can guide and train lower level workers in vocational knowledge. There would also be skilled workers who can become the higher skilled workers after some time. A lower category of trained workers are those who undertake simple work operations in simple technical production processes. They only need production instructions, requirements on work safety and short-term occupational work practice on the spot. To become skilled workers they should be given standard in-service training in vocational schools.

Country experiences

There are three types of training programmes: the narrow-range trade, the wide-range trade and the combined programme. The first is a highly specialized short-term training and results in high labour productivity. This is for stable fields of production in which specialization is high and the science and techniques change slowly. The trainees development is limited to the specialized area. The second type covers basic content for a number of narrow range traders which have a common technical base. In the later part of the programme the trainee is allowed to specialize in any one of the occupations in which he was trained earlier. The trainees are able to meet immediate demands of production in a given area and at the same time have flexibility for change of productive techniques and new equipment without being retrained. The combined programme covers training in several trades with simple content which have no common technical basis. These are occupational training programmes that link handicraft labour to semi-mechanical work. The trainees acquire a certain knowledge and understanding of work utensils or means of production, and the products they will make, or the results of their services. All workers are expected to learn to create products with high labour productivity and high quality of results.

Vocational and technical training takes place in the formal educational system as well as in the non-formal. The formal training schools are the vocational schools and the vocational secondary schools. In the vocational school, training is from one and a half to three years depending on the nature of the occupation. They are expected to make the students skilled workers with general basic education. The vocational secondary schools train students in all trades and provide them with general secondary education. They provide complicated wide-range trades training along with a general secondary education balancing theory and practice.

To complement the formal training system, Viet Nam has several kinds of non-formal vocational education. For school leavers there are vocational and technical education centres which are managed at the district or inter-district, township or municipal levels. The type of training varies according to the trainees' needs. They may be trained to become managers of agricultural co-operatives, professional personnel or for simple technical trades cultivation, forestation, preservation, simple mechanical repair and other fields of occupation. The approaches to training also vary according to the training demand of the locality and the training capabilities of the centres. Theory and basic skills may be provided, in some cases, by the centres with practice taking place in community establishments. In others, professional skills training may be done in business establishments with teachers from the centres providing assistance and instruction. Training in trades that do not require sophisticated technical equipment may be done in the centres while those that do not require much theoretical learning may take place in the production units.

There are also special vocational-technical education centres for wounded soldiers and the handicapped; their educational content and methods are suitable to the target groups. Production units also have the duty to train their workers and, therefore, set up short-term courses for them right on the job. Some individual workers get tutorship when they cannot form groups big enough for organized

courses. Variations in training programmes arise from the number of trainees and the level of skills that they possess.

Admissibility. Occupational training is for everyone, hence the diversity in types, duration and approaches to training. As a consequence entry requirements are not uniform. The government, however, recognizes a problem of 'value fixation' in the choice of careers. Students often choose careers for their social importance, their attraction to people such as foreign trade, foreign specialized professions or home trade. Preparation for training in a given vocation requires real interest in the vocation, capability to practice it and compatibility of one's physical development to the work.

THAILAND

Training programmes. The 1977 National Education Scheme stipulates that 'the government shall give wide support to vocational education in conformity with economic and social conditions both in the form of integration with economic content at each educational level and independently as the need arises, emphasizing agricultural and industrial knowledge'.

The vocational training in the formal school system is given emphasis at two levels – lower and upper secondary. At the lower secondary level, the main focus is on self-employment. This involves training in simple occupational skills which require only small investments and short training time for acquisition of skills useful to daily life activities and appropriate to local situations.

At the upper secondary level and after exposure to a wide range of academic and vocational subjects, the students are required to concentrate on subjects chosen according to their aptitudes, abilities and interests. They should be able to apply what they learn to earn a living in the future. The curriculum also provides learners with experiences necessary for pursuing higher education in the future.

The assignment of training subjects at both the lower and upper secondary levels allows also for training outside school. This may be in academic institutions, work establishments or independent career establishments. This arrangement allows the learners to learn through actual practice and to realize that knowledge and skills can be learned from experts in the local community.

The Department of Vocational Education also offers training in 'jack-of-all-trades' schools, colleges of mechanics, colleges of commerce, technical colleges, colleges of arts and crafts, vocational education colleges, agricultural colleges. These are all under the Ministry of Education.

Outside the formal school system and based on the assumption that school leavers, even at the elementary level, have very little chance of furthering their studies, intensive vocational courses are offered in non-formal education centres. These are open to the general public in almost every province and most of those who enrol do so because they lack financial support for furthering their studies and yet have geniune interest in vocational training. The training centres place emphasis on

vocational skills training rather than theoretical studies. The instructional process concentrates on the development of practical skills and employs the workshop training technique. Precise mathematical calculation for example is substituted with practical estimation of the materials needed.

Several agencies outside the Ministry of Education have organized programmes and projects that promote the vocational training thrust of education. The Department of Non-Formal Education has provincial as well as regional non-formal education centres. The Ministry of Interior provides training in Skills Development Institutes and through the Department of Rural Development. There are also independent agencies one of which, the Special Arts and Crafts Centre, was established in 1980 by the SUPPORT foundation under the Royal Patronage.

Admissibility. For the vocational training in the formal school system which is offered at the upper secondary level, the requirements for admission are the requirements for this level of the formal system. For training in centres of other non-formal schemes, admission is for all and the training itself is diversified to cater to different types of trainees. It has been found out, however, that vocational training could be more effective in producing educated and better trained workers if the entry level of the trainee is that of a secondary school graduate.

TURKEY

Training programme. Vocational training is part of the basic education programme, while in the traditional junior high school educational programmes, four hours a week of vocational education is given under the name of elective courses. These courses aim to prepare students for daily life, to improve the relationship between education, production and manpower, and to establish co-ordination between school and the local community. They include woodwork, metalwork, electricity, automotive in the industrial mechanics, copperwork, silverwork, knitting, textile as a craft; food, family relations, home management, clothing, hand work in the home economic area; fishing, animal breeding, forestry, agriculture; typing, accounting, hotel services and management and commercial group; the art of public speaking, dramatization, folklore, graphics, playing instruments, singing, fine arts and other courses like photography, camping and library skills. On the other hand, in the eight year educational system, special weight is given to activities related to work and daily life. In these institutions, students of the 4th and 5th year take four hours per week of vocational education courses and the 6th, 7th and 8th year students take six to eight hours. The 4th and 5th year vocational education courses aim to create an interest and give some general information for easier adaptation of various professions. The vocational education courses in the 6th, 7th and the 8th years attempt to give detailed information and necessary skills in agriculture, trade, home economics, and work in technical areas.

Vocational education provides the students with problem solving experiences that include creating, designing and working with materials, processes and products fundamental to contemporary industry. Emphasis is on broad concepts relating to industrial materials and processes. However, individual students may develop in-

depth knowledge and skills in specific subject areas. Technological education has six functions: technical, occupational, consumer, recreation, cultural and social.

In the vocational areas, the student is involved in the search for better ideas and better ways of doing things in projects that require creating, problem solving, designing, constructing and developing. He is expected not only to gain understanding and appreciation of contemporary technology, but to contribute to the advancement of that technology. In its occupational function, technology education offers opportunities for the student to get exploratory try-out experiences in various basic industrial occupations. Consumer competency is also developed through an understanding of materials, processes, structures, designs and aesthetics to arrive at intelligent decisions, considering functions, durability, quality and economy. The recreational functions complement the technical and occupational functions by encouraging the students to explore, experiment, and develop ideas which are essentially expressive of himself. The cultural and social functions of technological education make the student competent in adapting to and dealing with a technological society and culture.

Vocational courses are selected in accordance with the facilities and the conditions of the schools as well as the surroundings, and the interests and abilities of the students. Teachers suggest but students select their individual group work projects. Schools co-operate by allowing students of other schools to use their facilities and may even add courses not included in the list of the Ministry of National Education, Youth and Sports. The students can also be sent to work sites on certain days of the week for these courses.

Total class activities, group activities and individual activities are all utilized as learning processes, depending on the learning objectives. The school, however, must provide all materials that will reflect the technological features for learning and must allow the students the opportunity to study and handle these materials. The students must be motivated to participate in the activities of the surrounding industries. They should be able to express their ideas not only by words but by technical drawing, graphics, equation and formulas.

Admissibility. Because vocational training is a component of the formal basic education curriculum, the requirements for admission are those for this specific educational level of the curriculum. It is apparent in the programme itself that for success in training, the learners must have the broad basic skills and knowledges needed for specific occupations. Quite important also, is the positive outlook on work in the environment and a desire to participate in this.

Summary

Each country recognizes the need for work education and work oriented training among the young and the adult population. Educational programmes in all the countries provide work experience in the curriculum. The length of time and the types of training differ. In general, these depend on the national foci; but it is evident that all vocational education programmes start with exposure to the basic

areas of work in the different service and/or production oriented occupations in agriculture, industry, business, engineering and technology, health and science and other existing occupations. The programmes are a response to the country's need to develop educated and trained manpower.

Training programmes in schools and in some non-formal education centres not only provide vocational skills training but aim to raise the general education qualification of the trainees and to improve their personalities as workers. The degree of emphasis placed on one or the other of these areas depends on the types of occupation, generally, on whether it is a service or a production type of occupation. It also considers the entry skills and knowledge of the trainee.

The training for specific occupations is built mainly on the general education of the prospective worker. There may be particular requirements for different occupations but there are common demands that occupations make on a worker. Basic to all occupations is the work ethic, the desire to work and to perform one's work to the best of one's ability. Thinking skills and the ability to make choices and decisions are also inherent requirements for work. Training programmes in the different countries reflect such common skills needed for the different occupations even as they prepare the trainees in special skills.

Chapter Three

DIRECTIONS AND TRENDS IN OCCUPATIONAL AREAS

It is necessary to identify the training areas which vocational education and occupational training schemes are offering to future technical/agricultural and other manpower for planning the scope and the length of the training period. As science and technology make the work environment more complex and diverse, education and training have to, correspondingly, provide more advanced and varied concepts and skills as well as enhanced appreciation of values and attitudes toward work. The analysis of the occupational sector intends to give directions to the 'Why', 'What' and 'How' of these programmes. Having a clear view of the goals for which education and occupational training are being organized, planners should be able to bring about relevance in the programmes through a strong congruence between education and training and the world of work, at least in the next five to ten years before new changes in the work sector may require major changes in education and training.

The following pages reveal the major directions and trends in some occupational areas in the countries which attended the Study Group Meeting. These pages determine the manpower needs of each country. Based on these identified manpower needs, certain recommendations towards needed revision of the general education curricula are formulated at the end.

AUSTRALIA

Industry – occupation structure of the workforce. After thirty years of economic growth since the Second World War, Australia has experienced a sharp economic downturn, structural changes in the economy and high rates of unemployment. In the ten years to June 1984, real gross domestic product grew at only 2.5 per cent per annum, compared with an annual growth rate of about 5 per cent for the preceding 20 years. The relatively slow growth rate after 1974 was accompanied by growing unemployment. For instance in 1964 the estimated unemployment rate was 2.8 per cent; in the 1970s and 1980s it has risen to 8-10 per cent of the workforce. The unemployment rate for September 1986 was 8.3 per cent. The average duration of unemployment also lengthened considerably. In 1974 the average duration of unemployment was 6.5 weeks; in 1985 it had risen to 15.9 weeks. The unemployment rate has been highest in the metal (6 per cent) and construction industries (9 per cent), particularly among tradespersons and production workers (8 per cent).

The above trends have been caused in part by structural changes in the economy. In 1974 half the Australian workforce was employed in producing visible products in the agricultural, mining, manufacturing and construction indus-

tries. By 1980 nearly two thirds of the workforce was engaged in the service industries, in particular the processing of information. The growth industries in the past decade have been community service (particularly for females), finance and business services, and public administration (Table 1).

Those industry sectors showing a decline in terms of workforce size are Agriculture, Manufacturing and Construction. The distribution of the workforce across industry sectors between 1974-1986 is shown in Table 2.

Table 1. Proportion of employed persons in each industry category

Industry category	*1974*	*1986*
Agriculture, forestry, fishing and hunting	6.9	6.0
Mining	1.5	1.5
Manufacturing	23.4	16.4
Electricity, gas and water	1.8	2.0
Construction	8.6	7.1
Wholesale and retail trade	19.9	20.1
Transport and storage	5.6	5.7
Communication	2.2	2.2
Finance, property and business services	7.3	10.2
Public administration and defence	4.3	4.7
Community services	12.6	17.7
Recreation, personal and other services	6.1	6.7
Total	100.0	100.0

Source: The Labour Force, Australia (6203.0)

In terms of the occupational structure of the national workforce the growth employment sectors over the past decade have been the Professional; Technical, Administrative; Managerial, Service; Sport and Recreation; Clerical and Sales categories. The workforce has declined in the Trades; Production; Process; Agriculture; Transport and Communication occupation categories (Table 2).

Table 2. Proportion of employed persons in each occupation category

Occupation category	*1974*	*1984*
Professional, technical etc.	12.3	15.7
Administrative, executive and managerial	6.3	6.8
Clerical	17.1	18.1
Sales	8.4	9.0
Farmers, fishermen, timber-getters, etc.	7.3	6.9
Transport and communication	5.8	5.0
Tradespersons, production-process workers and labourers, n.e.c. and miners, quarry-workers, etc.	34.0	28.4
Service, sport and recreation	8.8	10.1
Total	100.0	100.0

Source: The Labour Force, Australia (6203.0)

There are three major implications of the findings for education/training institutions in Australia:

1. Established industries are declining as major employers of the work-force, (although still contributing significantly to the economy). They must undergo major technological change to remain viable and competitive.
2. The structural changes in the economy have resulted in large numbers of retrenched and redeployed workers and declining overall employment opportunities in some established industry sectors.
3. These structural and technological changes have created new employment opportunities, particularly in the professional and technical occupations.

CHINA

General directions in the occupations. In his report on the Seventh Five-Year Plan of China delivered at the Fifth Plenary Session of Sixth National People's Congress, Premier Zhao Ziyang made a clear exposition on the training aim of general education in China. He said that, 'various kinds of schools at all levels should implement the guiding principle of all-round development in morality, intelligence, physique and aesthetics, and should properly strengthen the labour education in the light of the characteristics of their own'.

The labour education component must respond to the realities of the employment sector, described as follows:

a) The total number of employed labour force in 1982 was 449.1 million, which made up about 45 per cent of the total population. The distribution of the labour force was as follows: 334.7 million for agriculture (74.5 per cent), 51.24 million for industry (11.4 per cent), 16.08 million for trade and social service (3.5 per cent), 12.13 million for education, culture and health care (2.6 per cent and 35.95 million for other sectors (8 per cent).

b) The number of people who waited for jobs in urban areas in 1982, was 340,000, among whom 158,626 (46.65 per cent) were male and the rest 181,495 (53.35 per cent) were female. Of the people who waited for jobs, 262,138 (77.1 per cent) were at the age group of 15-19 and 77,983 (22.9 per cent) were above 19. The categories of the people who waited for jobs were as follow by education: 42,587 (12.5 per cent) were primary school graduates, 169,330 (49.7 per cent) were junior secondary school graduates, 121,414 (35.7 per cent) were senior secondary school graduates, 110 (0.14 per cent) were university graduates and 6,680 (1.96 per cent) were illiterates.

The main occupation in China now is agricultural production and there is no unemployment in rural areas.

c) The projected changes in the employment situation in China for the period of 1986-1990 are as follows: in urban areas there will be about 30 million additions to the labour force to be employed, among whom 8 million should be skilled workers and technicians. The percentage of technicians will be raised from 27 to 50 per cent and that of the senior technical personnel will be raised from 2 to 5 per cent. The rural areas will need a labour force of nearly 42.5 million, among whom 1.3 million should be middle-level technicians.

The majority of the new labour force in urban areas during the period of 1986-1990 will be employed by service occupations. In rural areas the new labour force needed will be farm workers.

In order to meet the needs and requirements of China's open door policy and the reforms of economic structure both in urban areas and rural areas, the trend is to strengthen the proportion of labour/technical education and vocational/technical education in general education in order to enable the students to adapt themselves to the new situation.

The National Conference on Vocational and Technical Education held in 1986 put forward an important task of training 8 million intermediate and junior engineering, managerial personnel and technicians, especially for the service trade during the period of the Seventh Five-Year Plan. It will be very difficult if China solely depends upon the specialized secondary schools, technical workers' schools and agricultural secondary schools to fulfil the task. There are presently 2,529 specialized secondary schools with an enrolment of 1.01 million students; 3,548 technical workers' schools with an enrolment of 740,000 students; and 8,070 agricultural secondary schools with an enrolment of 2.29 million students. There is a big difference between the total enrolment of 4 million students at the three categories of schools and the required 8 million skilled people. Thus, the emphasis on the vocational and technical courses in general education will contribute to the fulfilment of the task of training 8 million skilled personnel.

MALAYSIA

General directions in various occupations. Agriculture is the mainstay of the nation's economy and provides the highest share of total employment for the workforce. Due to the efforts towards industrialization, which began more than 25 years ago, there has been a marked shift in the employment growth pattern towards the more dynamic industrial and service sectors. Although the agricultural sector's share of employment remains the highest at 35.7 per cent in 1985, there was a decline in its percentage share of employment by about 4 per cent between the period 1981-1985 and this trend is expected to continue down to 32.7 per cent by 1990. (Table 3).

Much progress has been achieved in the manufacturing, service and construction sectors expecially during the 1970's. The present recession is expected to generally slow down economic activities; nevertheless, over the next 5 year period

between 1985 and 1990, all these sectors are expected to grow at a rate of 2.6 per cent, 4.3 per cent and 4.7 per cent per annum respectively.

Table 3. Malaysia: Employment estimates by sector 1980-1990

Sector	*1980*	*1985*	*1990*	*Average annual growth rate (%)*	
	%	%	%	*1981-1985*	*1986-1990*
Agriculture, forestry, livestock and fishing	39.7	35.7	32.7	0.4	0.5
Mining and Quarrying	1.7	1.1	0.7	−5.5	−7.7
Manufacturing	15.7	15.1	15.4	1.9	2.6
Construction	5.6	6.9	7.8	7.0	4.7
Electricity, gas and water	0.6	0.7	0.8	5.2	1.9
Transport, Storage and Communications	4.3	4.9	5.3	4.8	4.3
Wholesale and retail trade, hotels & restaurants	14.0	15.5	17.1	4.6	4.3
Finance, insurance, real estate and business services	1.6	1.9	2.0	5.3	3.5
Government services	13.7	15.0	14.8	4.5	2.1
Other services	3.1	3.2	3.4	5.6	3.3
TOTAL	100.0	100.0	100.0		
Unemployment rate (%)	5.7	7.6	10.1		

Source of data: Malaysia: Fifth Malaysian Plan

Employment opportunities in these three sectors are expected to be highest in the production and service level of skilled workers categories. (Table 4). Both the production and service level occupational groups recorded an increase of 39.0 per cent and 16.7 per cent between the period 1981-1985, and by 1986-1990 the increase is expected to be 42 per cent and 15.1 per cent respectively. Much of the growth in the production level will be in electronics, electrical appliances, manufacture of construction materials. Growth in the service category is attributed to the retail sector because of the small capital investment and low level of skills required. The hospitality services is also expected to provide more employment as a result of increasing emphasis being given to the tourism sector.

Due to the present recession, the unemployment rate is expected to increase considerably. By 1990, more than 10 per cent of the total labour force will be unemployed as compared to 5.7 per cent in 1980 and 7.6 per cent in 1985. Most of them will be secondary school leavers and graduates between 15-24 years.

The majority of workers in the production and service categories are mostly those without lower certificate of Examination (LCE) after 9 years of General Education. This trend is however declining, as more and more youths enter the labour sector with better qualifications.

Recent government efforts are being exerted to generate further economic growth through an all out industrialization drive towards manufacturing. An industrial Master Plan has been drawn for this purpose. A variety of technological changes in manufacturing activities has been planned to replace old technology, to

increase productivity and improve the product design and production processes. The strategy for planning and development of human resources will require a radically different approach in order to be consistent with manufacturing growth targets. The most pertinent direction points out to greater participation by the private sector in vocational training and in the in-service training of workers.

Table 4. Malaysia: Employment estimates by major occupational groups – 1980-1990

Occupational Group	*Share of employment*			*Increaset in employment*		*Average Annual growth rate (%)*	
	1980	*1985*	*1990*	*1981-85*	*1986-90*	*1981-85*	*1986-90*
	%	%	%	%	%		
Professional and Technical workers	6.0	6.5	6.6	10.5	7.6	4.4	2.6
Administrative & managerial workers	1.0	1.1	1.2	1.6	1.8	3.8	3.6
Clerical workers	7.3	7.6	7.7	10.0	8.7	3.5	2.6
Sales workers	9.8	10.5	11.2	15.3	17.3	3.9	3.6
Service workers	8.7	9.6	10.2	16.7	15.1	4.7	3.5
Agricultural works	38.7	34.9	32.0	6.6	7.5	0.5	0.5
Production workers	28.5	29.8	31.1	39.3	42.0	3.5	3.1
TOTAL	100.0	100.0	100.0	100.0	100.0	2.6	2.3

Source of Data: Malaysia, Manpower Planning 1980

PAKISTAN

General directions in the occupational areas. According to the 1981 census, the total population was 84.35 million. The rural population was 60.41 million, and urban was 23.94 million. The annual growth rate was 3 per cent. The civilian labour force constituted 29.65 per cent of the total population. Pakistan is predominantly an agricultural country with a cultivated area of 31.33 million hectares. The total area of the country is 796,095 square kilometres.

The labour force participation rate of 29.56 (51.68 per cent male; and 5.79 per cent female) is one of the lowest in the world. The low level of participation is attributed to a number of factors especially the low level of female participation because of the work preference prevalent among Muslim women; pre-school children, the elderly and the disabled, and those who do not seek work and hence do not enter the labour force. There is reported unemployment of 4 per cent which has been under-estimated in the Labour Force Survey.

Unemployment by Level of Education Over the past Ten Years

	Level of Education	*1984-85*	*1982-83*	*1978-79*	*1974-75*
1.	Illiterate	57.00	57.24	58.43	46.70
2.	Less than Matric	28.53	27.87	27.38	26.93
3.	Matric but less than graduate	12.66	12.88	12.58	21.79
4.	Graduate and above	1.74	1.66	1.51	4.57
5.	Others	0.07	0.36	0.06	0.02

(Source: Pakistan Labour Force Survey 1974-1985)

It appears that the unemployment rate of those with less than Matriculation education has increased; whereas those with Matriculation or post Matriculation education has decreased.

Sectoral employment. Agriculture continues to provide the bulk of employment with 50.56 per cent in the employed labour force. Manufacturing has a share of 13.67 per cent, followed by wholesale, retail trade, restaurants and hotels 11.54 per cent; community social and personal services 11.07 per cent, and construction 5.60 per cent. Among the various occupations clustered in some groups, the agriculture group is the largest including agriculture, animal husbandry, forestry, and fisheries workers. The next group is that of industrial production and related workers, transport equipment operators and labourers 27.15 per cent; sales workers 10.19 per cent; service workers 4.50 per cent; professional, technical and related workers 3.49 per cent; and clerical and related workers 3.45 per cent.

The agricultural sector will be the dominant sector of the economy for the next one or two decades. The process of mechanization in the past decade or so has affected the traditional occupational structure. Rural artisans have been disappearing from the scene and a new class of technicians has appeared to provide service. Roads are being built to link the rural areas with urban centres which will consequently affect the transport and communication system. Horse driven buggies have been replaced by automobiles. A new class of workers like drivers and cleaners has emerged. In order to improve efficiency in the agricultural sector and to provide safety and secure the crops from natural calamities, a corps of extension workers motivate the farmers to implement scientific/innovative techniques and methods. Rural electrification is strongly emphasized. This will further increase the use of electronic gadgets in many households. Skilled manpower for refrigeration, airconditioning, radio and TV repair services will be essentially required.

The next largest sector which provides employment is industry. This sector has to develop and grow further to meet domestic requirements. Expansion of the industry sector will require a larger number of skilled workers, especially those possessing employable productive skills. In order to maximize the employment potential of the industrial sector, the policy of its expansion will require concentration of industries in the already overcrowded and congested urban centres; and further development of a base for agro-industries in the rural areas. Thus agro-

industrial trades have to be developed side by side with the vocational trades in the industrial sector.

Service industry has been expanding with the improvement of infrastructural facilities. Though the restaurants and hotels are mainly owned and run by individual family members, yet there is an increasing trend toward modernizing the catering industry. The Tourism Development Corporation has been instrumental in providing infrastructural facilities to train workers for the tourist industry. The scope of this training has to be expanded so that the restaurants and hotels are run efficiently. Self-employed individuals also need some training for the development of their entrepreneurial skills. Individuals with some skills who require guidance to become self-employed need information on how to finance their business, what the sources of financing are. There is also an increasing trend in the wholesale business which requires skilled workers in business management and bookkeeping. Thus the scope of the existing network of commercial institutes needs to be expanded.

The construction industry has been providing employment to skilled, semi-skilled, and unskilled workers. Although the Pakistani migrants are returning from the OPEC countries of the Middle East yet there will be need for additional skilled workers and technicians who are able to build concrete houses. The production of steel and the attainment of self-sufficiency in the production of cement will serve as a stimulus for this.

PHILIPPINES

Data for the last five years in the manpower employment sector shows that a great number of the employed are in agriculture with those in production industry next and those in salesmanship and services following. The figures for 1981 to 1985 are shown in Table 5).

Table 5. Manpower employment by occupation by year 1981-1985 (In thousands)

Occupation	*1981*	*1982*	*1983*	*1984*	*1985*
Technical Workers	1,078	1,094	1,139	1,135	1,179
Administrative, Executive and Managerial Workers	185	193	176	186	187
Clerical Workers	769	822	871	814	831
Trade Workers	1,948	1,911	2,171	2,409	2,558
Service Workers	1,331	1,317	1,505	1,543	1,643
Agricultural Workers	8,862	8,879	9,805	9,689	9,580
Production workers	3,275	3,149	3,535	3,816	3,817
Occupation NECS	5	5	11	81	5
TOTAL	19,434	19,352	21,196	21,657	21,785

Source: Integrated Survey of Households, NCSO

Actual Data: 1981-1985
Projected Data: 1986-1990

The manpower requirements based on job vacancies as solicited by public employment centres, however, show a declining trend in agriculture, animal husbandry, forestry and fishery, and to some extent, the unclassified work group. If trends continue as shown in Table 6, in 1990 there will be more job openings in areas other than agriculture. These will need to be created as less people would be needed in the new farms with more modern technologies being used. There may be more jobs in the administrative, executive and managerial sectors as more public employment offices are created.

Table 6. Actual and projected manpower requirements by occupations 1981-1985 (In thousands)

Occupation	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
Technical Workers	1,279	2,155	3,617	6,077	10,209	17,151	28,813
Administrative, Executive and Managerial Workers	192	698	2,541	9,248	33,664	122,535	446,028
Clerical Workers	1,425	1,679	1,981	2,338	2,759	3,255	3,841
Trade Workers	3,015	3,514	4,111	4,810	5,628	6,585	7,704
Agricultural, animal husbandry and forestry workers and fisherman	778	194	49	12	3	1	0
Production Workers	10,369	10,896	11,441	12,013	12,613	13,244	13,906
Workers not classified elsewhere	150	138	127	117	107	99	91
TOTAL	17,208	19,272	23,867	34,615	64,985	162,870	500,384

Source: Integrated Survey of Households, NCSO.

Actual Data: 1984-1985
Projected Data: 1986-1990

Unemployment data show that the unemployed are mostly in the 20-24, the 25-34 and the 15-19 age groups. These are mainly the young adults. It seems that getting settled in a job comes quite late in the life of the Filipinos. The data shows that unemployment tapers off starting from the age group 35-44. There is more unemployment among females than among males. However it is projected that, by 1990, there will be more unemployed males since the greater rate of increase in unemployment is among the males. The employment figures also indicate that a great number of the available labour force remain unutilized and lie dormant. Many graduates of educational institutions are out of jobs partly because jobs are not available or if they are, their talents and training do not match these. Such wastage in manpower resources could be avoided if plans and programmes to absorb them are carried out or if something is done to broaden their training particularly at the high school level.

The highest rate of unemployment is among high school graduates although trends show a higher rate of increase of unemployment among college graduates. Projections show that there will be less unemployed among the elementary school graduates and those who have not completed any grade level. It is believed that the

workers in these groups work in the agricultural sector for which a high level of education is not required. This phenomenon results in more people in the rural areas being in the labour force than those in urban areas. Unemployment among post secondary school leavers will be more prevalent than among those who finish bachelor's degrees in commerce, business administration and accounting, engineering and technical education, nursing, medical technology and related sciences and economics. The probability is that because of the popularity of these courses among the young, there are too many graduates for the jobs available in these areas. This is probably due to the fact that the white collared jobs are still more popular among the young Filipinos.

An analysis of the employment profile of the labour force shows that although employed, a great number of workers want additional work. They are mostly from the low paying jobs because they find their incomes insufficient for their needs. Unemployment rates, although not very high, continued to rise from 1981 to 1985. Unemployment is lowest among those with no grade completed when compared to those in the other educational levels. This is probably due to the fact that the number of those with no grade completed is quite low. With compulsory elementary education and the high premium that the Filipino has for education, there are not too many who would not have completed one or a few grade levels of education.

REPUBLIC OF KOREA

General directions in various occupations. Since the first Five-Year Economic Plan was initiated in 1962, the economy has grown very rapidly achieving major successful accomplishments in the five-year economic plans continued up to 1979. Through economic development, the industrial structure has changed the Korean society from an agricultural society to a light industry society and, then, to a heavy industry society. Later on with the coming of the communication and information era the service industries have been emphasized. During the past period, manpower structure has also been changed by the industrial development stages. These phenomena will continue to influence industrial development in the future. Therefore, it is very important to review the trends in the manpower structure and determine their implications on future directions for education and training.

Considering the Korean experience of the past few years and the future developmental trends, some apparent characteristics of manpower structure may be summarized as follows:

1. The labour-oriented industries that took the lead in the industrial structure in 1960s and 1970s will be reorganized into technological and capital oriented and creative industries to achieve a highly industrialized society in the 1980s and 1990s.

2. Employment opportunity in the agriculture, forestry, and fishery sectors will decline continuously in their manpower needs which have gone from 50 per cent in 1970, 46 per cent in 1975, 34.8 per cent in

1980, 34 per cent in 1985 and are projected to be 18 per cent in 1991, and to 13.6 per cent in 1996.

3. It is anticipated that employment opportunities in social services and related fields will increase very rapidly. According to projections, the portion of social services and related fields in the industrial manpower structure will increase from 35 per cent in 1975 to 60.2 per cent in 1996.

4. The number of professionally qualified technical, and managerial workers will also increase in the 1980s and 1990s as Table 7 shows. The demand prospect for professional, technical and managerial workers will increase at the average annual rate of 4.1 per cent from 1985 to 1996. The projected demand for professional, technical and managerial workers will increase at the average annual rate of 8.7 per cent from 1985 to 1996. These trends and prospects imply the important role of vocational-technical education in higher education. The table shows the occupational needs that education and training must meet.

Table 7. Projected manpower requirements by occupation (1986-1996)

	1985	*1991*	*1996*	*Annual increasing rate*
Total (1,000 persons)	*100.0 (14,875)*	*100.0 (16,742)*	*100.0 (18,098)*	*1.8*
Professional, technical and managerial workers	6.9	7.8	8.8	–
(Technical workers)	(1.1)	(1.6)	(2.2)	(8.7)
(Medical workers)	(0.8)	(0.9)	(1.1)	(5.6)
(Teachers)	(2.2)	(2.5)	(2.6)	(3.4)
Clerical workers	13.8	15.0	15.7	3.0
(Accountant, cashiers)	(3.9)	(4.2)	(4.3)	(2.9)
Sales, services workers	24.5	28.5	30.1	–
(Wholesalers, retailers)	(8.5)	(9.8)	(10.5)	(3.8)
Production workers	30.1	30.8	31.9	2.3
Agri. Forestry and Fishing workers	24.7	17.9	13.5	–

Source: KDI (Korea Development Institute), 1986.

Projected employment and unemployment by levels of education. One of the main characteristics of the Korean people is their anxiousness to learn. Parents especially want their children to be educated, and they are ready to sacrifice everything for their children's education. Therefore, the advancement of the rates of graduates of each educational level is high and still increasing.

Most graduates of primary school and middle school enter a school of higher grade instead of going into the world of work. However, it must be considered that about 10,000 graduates of primary school and 90,000 graduates of middle school go

into the world every year without having any competencies for gainful employment. It is also a fact that, even though the different occupations and their demands for highly educated manpower are increasing, 21 per cent of high school graduates still leave school without getting jobs nor entering colleges. This trend implies that various vocational training programmes should be offered for these school leavers.

These training programmes have to be responsive also to the characteristics of the future industrial society, the manpower structure and changes in the occupations that will be highly influenced by automation, computerization and the explosion of new knowledge and technology. It is generally felt that computers will be daily necessities in the future. To meet the challenges of the changing society, the economic society requires that students acquire the competencies to understand and prepare for the world of work. This means career guidance programmes at both the elementary and secondary levels. The primary level should provide for career awareness and the secondary level for career exploration.

SOCIALIST REPUBLIC OF VIET NAM

General education holds an important position. It is the educational foundation of the country that provides the initial and important base for the future development of the nation.

This makes career orientation, and occupational training or vocationalization even in general education schools urgent and strategic and the study of the relationship between the content of general education and occupational training and retraining necessary.

Trends in the major occupations. With the plan to reduce the population growth rate to 1.7 per cent the total population of Viet Nam in the year 1990 may be under 66,000,000. A new orientation for labour force distribution in the major occupation would, therefore, be needed to:

a) Develop the employment right of each locality to attract extra and new manpower;

b) Supply more manpower for the agricultural sector, especially for the Central Western Plateau, the Mekong Delta and the Northern mountainous provinces;

c) Expand handicraft and services in cities, to encourage the development of family economy and products for export;

d) Motivate and organize the youth as pioneers in new jobs generation; and

e) Reduce the indirect labour force, the managers and the administrative personnel.

Projected manpower needs in the occupations. At present, in some places of the country (urban areas and the plain areas in the North) there are excesses of manpower; but in other places (such as in the Central Western Plateau, in the Mekong Delta and in mountainous areas) there are shortages. In the next five years there-

fore, the labour force has to be redistributed. At the same time training and retraining for workers to provide them with sufficient cultural and scientific knowledge have to be conducted to enable them to apply scientific and technical advancements to production.

Projected employment and unemployment by levels of education. At present there are about one million workers whose jobs are unstable, the majority of whom are in the cities. In addition to that, each year another one million reaches working age. Most are graduates from basic general schools and secondary schools and need jobs. If they are not employed there will be a great waste in manpower training. This will require the State and the people to solve the problem in the years to come.

There is now a work force of over 20 million. Most are literate. About 50 per cent have acquired primary education. The other 50 per cent have a higher education level. (This rate varies in different geographical areas). The level of skills in general does not match occupational requirements especially for the industrial workers. Workers having the skill levels one and two comprise 56 per cent; those acquiring level five makes up only 5 per cent and those having level seven (the highest skill level) make up only 0.5 per cent, which is about half of the number of those who obtained doctoral degrees. At present there is a great imbalance between cadres having secondary or higher education level and workers having various skill levels. The rate was 1:3 in 1978, and 1:1 in 1981. There is a serious shortage of skilled workers who directly take part in production work and those who require high technical level skills.

The agricultural production sector being at a low level of mechanization and electrification brings about a situation where 60 per cent of the total labour force is in the agricultural sector. In the years to come the agricultural, handicraft and service sectors will absorb more of the labour force.

THAILAND

The total population for 1986 was 52.5 million, about 14.3 million or 27.2 per cent lower than 11 years of age, about 14.6 million or 27.8 per cent outside the workforce range, and about 23.6 million or 45.0 per cent in the workforce age.

Educational backgrounds of the workforce. The total workforce in Thailand is estimated to be about 27 million. About 76.7 per cent of these have low educational qualifications (grade IV or lower than that – due to pre-mature drop-outs), about 16.7 per cent have middle level educational qualifications (grade VII or grade X), and about 5.9 per cent have high level educational qualifications (vocational education certificates/diplomas, teachers' colleges degrees/diplomas, and university degrees). Thus the majority of the workforce at present is grade IV or lower.

Workforce according to types of occupations. The agricultural sector accounts for about 72.6 per cent of the total workforce. The major component of this sector is rice farming, followed by maize farming (approx. 682,000 persons), rubber plantation (approx. 675,000 persons), and potato farming (approx. 506,000 persons).

The industrial/handicraft sector is divided into the following main components: weaving industry/ready-made clothes industry (approx. 479,000 persons); construction industry (approx. 257,000 persons); car/motorcycle assembly, car motorcycle repair industry, and vehicle parts production industry (approx. 121,000 persons); furniture industry/wood products industry (approx. 99,000 persons); rice milling industry/rice products industry (approx. 55,000 persons); electrical and electronic equipment industry (approx. 49,000 persons).

The commercial sector, accounts for about 1.7 million. About 99 per cent of this is in the retail industry and the remaining 1 per cent in the wholesale industry.

The service sector, involves about 2.2 million. This sector is divided into government and non-government sectors. In the government sector three are approximately 791,000 persons in the government services, and 563,000 in the educational services.

The private sector: comprises restaurant services, fast-food and drinks services (approximately 210,000 persons); haircut/beauty salon services (approximately 72,000 persons); and hotel/bungalow services (approximately 38,000 persons).

Unemployment by educational attainment. The unemployment problem is most severe for people within the middle level and high level educational qualifications. The latest data revealed that 110,000 persons (60,400 male, 49,600 female) with vocational education qualifications were unemployed. The problem was most acute among people with Home Economics qualifications.

The number of tertiary education graduates who were unemployed was estimated to be about 55,700 persons. The problem was most acute amongst those with degrees in Law, Education, Authropology, Social Science, and Science. Two main causes were cited for this namely:

1. During the last 4-5 years, the number of those who have finished education at either of both levels has been very high.
2. The main work market for these groups was the government sector which had to limit the intake of new recruits. At the same time, the unfavourable economic conditions forced the private sector to limit the number of positions to be filled up by these groups of graduates as well.

Short-term unemployment is one important reason which helps to explain why the rate of unemployment is not yet very high. What is implied here is that it is generally understood that long-term unemployment is a luxury which the poor (the majority of the people) cannot afford; hence everyone who can work has to struggle to find jobs.

Thus it might be seen that those who are unemployed (either in the urban or the rural areas) have to try to help themselves without assistance from the Government and other government agencies.

Occupations with relatively bright work prospects. It is expected that the two types of occupation with relatively bright work prospects in the future would be the service sector and the industrial sector. For the service sector, the main occupations which might be expected to expand rapidly include tourist industry, banking industry, hotel industry, and restaurant industry. Occupations in the industrial sector are also expected to expand considerably. At present, the employment in this sector accounts for only about 10 per cent of the total work force. Clearer strategies for creating more activities in this sector are seen to be of great importance.

TURKEY

General directions in various occupations. Since education must develop the people for creative participation in the economic efforts of the country, it has to look into the various occupations for which they are to be prepared. Attempts are now being made to improve domestic and foreign trade, increase the amount of home and foreign investment and to apply the rules of a free market economy in order to solve unemployment.

Turkey's population is 52 per cent male and 48 per cent female. Of the males 80 per cent are literate and 20 per cent illiterate. There are more illiterates among the females. Only 54 per cent of their total are literates and the remaining 46 per cent illiterates. The total population has 63 per cent who are twelve years ole or above, and therefore, belong to the working group. In Turkey, those 12 years old and above are considered the working population. These are either economically active or inactive. The total active working age population of 61 per cent comprises 64 per cent males and 36 per cent females. Of the 37 per cent inactive working age group, 73 per cent are males and 27 per cent are females. The inactive group includes retired people, students and housewives.

The main sources of the country's national income are agriculture, manufacturing and the service sectors. Of the total active workforce, 60 per cent are in agriculture, 28 per cent in the service area and 12 per cent in industry. The quality of these workforce may be measured, to a certain extent, by their educational qualifications. Table 8 presents the distribution of the active work group in the three major occupations by level of education.

Table 8. Distribution of the employed sector by level of education

	Agriculture	*Manufacturing*	*Service*
Illiterate	46.5	9.6	7.7
Literate population without any diploma	8.0	5.0	4.4
Primary school	42.3	66.8	51.1
Junior high school	1.5	7.2	9.7
Vocational school at junior high school level	–	0.2	0.2
High school	0.7	3.9	7.6
Vocational school at high school level	0.3	3.8	8.5
Faculty and other higher educational institution	0.7	3.5	10.8
Others	–	–	–
Total	100.0	100.0	100.0

It is easily seen that most of those who make up the labour force have very low education levels. Of those in agriculture 46.5 per cent are illiterates and 42.3 per cent have had primary education. The primary school graduates supply most of the labour force. The manufacturing sector has 66.8 per cent and the service sector, 51 per cent who are primary school graduates. The service sector employs more from the higher level education graduates. Roughly, one out of every ten people in this area is either a high school or a university graduate. It appears that a considerable number of primary school graduates do not pursue further education. One out of every two persons prefer to work after completing a primary school education. They are, however, faced with the need for basic skills training for jobs, and therefore, half of this group are unemployed.

The labour force in Turkey is mostly unutilized. Two persons out of every hundred are unemployed. The majority of those who are seeking jobs belong to the youngest age group, 12-24 years old. These are the people who would need further training for work.

Summary

The nine countries participating in the study group meeting have common aspirations in terms of national economic development. Each country is seeking higher levels of industrialization as agriculture, which is the main occupation area at present, starts to provide less jobs for people. This is attributed to the influence of science and technology which has brought about modernization and mechanization in farming. The trend is towards having less but better qualified and educated workers in the agriculture sector.

More jobs would, of course, be available in the production and service sectors as more industries are created. It is anticipated that there will be more need for those who will man the manufacturing and service areas. The advent of higher technology resources would, however, require higher educational qualifications of the workers.

Chapter Four

RAISING THE RELEVANCE OF TRAINING FOR EMPLOYMENT

The need for education manpower training is inherent in the socio-economic function of government. Governments' awareness of the situation in the countries involved in this study is reflected in the policies and corresponding efforts of their different agencies to make the people responsive to the new needs of the work environment. Changes of educational structures, the involvement of different sectors other than education in occupational training programmes and more extensive and advanced technological directions in the programmes indicate the efforts being made to meet the higher occupational requirements of modern society.

AUSTRALIA

Changes in the economic sector have prompted intense debates about the role and effectiveness of the education system in relation to meeting the needs of the workforce. There have been no straightforward agreements on the content and structure of the curriculum, or the organizational changes that are required within the education system.

Reviews of the education system in contexts of vocational training for employment in Australia, have identified the responses of the education sector to changes in the economy, technological change and labour market trends.

Diversification of the curriculum in the senior secondary school system. In South Australia, the secondary schools now provide a wide range of studies including those which have a practical orientation to life in general and to further employment or further study options. The list of available studies include accounting, agricultural studies, business studies, applied mathematics and legal studies. These studies aim to develop general competencies (e.g. analytical skills, problem solving techniques, creativity, interpretative skills, communication) and provide basic vocational skills and an awareness of careers in various vocational areas. The knowledge, skills and attitudes gained from these courses are considered of value to the student as a member of the community and as preparation for future education/ training or employment.

Inter-institutional relations: Secondary schools and technical and further education (TAFE). The secondary school/TAFE interface has become more significant as retention rates in upper secondary schools increase. 'Link' or 'Co-operative' courses have been conducted within a TAFE College for secondary school students. These courses introduce students to a vocational area.

Some secondary school students have studied selected accredited TAFE vocational subjects (e.g. business studies) concurrently with general school subjects.

In some cases they have received credit towards a recognized TAFE course. Secondary schools have also designed courses which facilitate the access of secondary school graduates to existing TAFE award courses.

Pre-employment broad based training. In recent years full time pre-vocational courses (38 weeks duration) have been introduced by TAFE. These courses have been designed to provide initial broad-based skills training in a particular vocational area (e.g. electronics). A general education component is also included in these courses. It includes personal development, life skills, communication, health and recreation, career education and computer awareness. These courses provide students with immediately useable knowledge and skills and enhance their employment options within a range of related occupations.

Follow up studies of graduates from the pre-vocational programme indicate that these courses have successfully assisted participants to obtain employment and access to further education/training. In 1984, 87 per cent of pre-vocational students in South Australia completed the course, 74 per cent of graduates who attempted to obtain an apprenticeship were successful, 86 per cent indicated that their choice of employment was positively influenced by participation in a pre-vocational course and 84 per cent indicated they had used skills from the course in their employment.

A perusal of vocational training and retraining programmes reflects the fundamental belief that general skills obtained in the general education programmes are necessary for the acquisition of vocational skills. They acquire the traditional subject content of the formal education programme along with the occupational skills. Leaving school at any level, the students would have a certain degree of education that could form the base of occupational training or further training. The recent realization of the need for a strengthened career guidance programme along with work experience is a significant development towards making general education a relevant base for occupational training. The diversification of available subjects allow greater choice for students and the recognition of work as an integral element of adult life has placed the general education programme at an awareness level instead of mastery of specific occupational skills at this early stage.

CHINA

After the reform of the secondary education structure vocational and technical education was added to the curriculum of the middle schools. This is proposed to prepare the students for the occupational and professional training that they will undergo afterwards in agricultural and other vocational schools.

The programmes of vocational schools are made up of academic, professional basic and professional education. The curricula of general education programmes provide the beginnings for all the courses offered in the vocational technical schools. The subjects at the junior high level which earlier were politics, Chinese, foreign languages, mathematics, physics, chemistry, biology, physiology and health care, history, geography, music, physical education and fine arts were the same subjects taken up at the senior high school with the exclusion of physiology and health care, music and fine arts. In the reform of the structure of secondary schools those that

chose to remain academic added a complement of work/labour and technical education. These were intended to provide the students with an introduction to fundamental knowledge and some initial work skills. The graduate of these schools can, therefore, easily enter the training programmes in agricultural and other vocational schools when they so desire.

The vocationalized high schools link general education with vocational technical education. These schools turn out graduates who are morally, intellectually, physically developed and equipped with general knowledge and techniques which might be needed for their future careers. Unlike those in the academic high schools who may opt to go either to college or direct to the labour market, the graduates of these schools rely on the government for employment. The kind of training and the low cost of studying in the vocational schools seem to answer to the present economic situation of the country. There is increasing acceptance from the public as well as the parents of this vocationalized education and measures are now being worked out for their expansion and development.

Training outside of the schools for the young and adult workers who left school requires the same ideological educational and academic preparation acquired in the formal system. At the junior middle school level training for the workers, the requirements are a bit lower. At present, since the job requirements and the workers' educational level differ very much in various enterprises or factories, different teaching programmes, curriculum and contents are adopted. Hence, requirements for entry vary. However, the general principle for workers education is that it should be in close accord with the production demands and that theory should be integrated with practice. For any of these types of training, the general education programme as it is now complemented with vocational courses provides the necessary background. The focus on science, mathematics and specialized work skills, evident in the vocational training programmes, has adequately been prepared for.

It is noticeable, however, that courses in personality and individual development do not have the same focus as they do in the other countries.

MALAYSIA

A common feature of all training schemes is the need for a good general education background in various learning areas. These are normally components of the general education programme in Malaysia. It is believed that language for communication and comprehension purposes is an important tool for success in training. Basic knowledge of science provides the trainees with a better understanding of the physical, chemical, or biological nature of the materials they work with in occupational training. Mathematics prepares the trainees for the area in training that deals with qualifications and specifications. Learning in the social studies helps the trainees widen and enrich their general knowledge of places and people whom they encounter in their fields of occupation. This is particularly true in the service occupations. Religious knowledge and civics provide school leavers with the appropriate orientation to life. This is considered most important for those in military training and youth training schemes. The creativity and design ability that arts

offers is also an important preparation for training that requires a good sense of proportion, colour and other related aspects. The pre-vocational studies in the general education programme give the students a knowledge of tools and their uses and make them dexterous in their use of these, as well as confident in training activities. The general education curricula at both primary and elementary levels provide sufficient general education to the trainees in the foregoing learning areas.

It is deemed necessary, however, that for greater efficiency, certain areas must be given more emphasis. These include more effective strategies in the mastery of the English language as the language becomes increasingly more important in the pursuit of occupational training. Arts may be infused with more functionality for developing appreciation for the finer qualities of life; for developing abilities in planning, designing and production of work pieces; and for initiating the use of these skills and knowledge productively either for occupational or recreational purposes. The pre-vocational studies have to be strengthened to give the students a broad exposure to all four vocational courses instead of just one, as is now being allowed them.

A review of the profile of the successful trainees reveals that besides the cognitive and psychomotor requirements, the trainee's personal and social skills, values, attitudes, work ethic and whole development play a vital role for success. Presently, these varied life skills have not been given formal attention as essential and very relevant to the students. Aside from moral education, there seems to be a need for another area in the school curriculum that could be highly contributive to the development of the personal social skills and the work ethic among the students. This should develop skills of socialization, ability to cope with stress and strain and courteous and disciplined behaviour. It should also encourage the trainee to develop some interests and a keen desire to pursue such interests; to be oriented toward the future with plans to achieve certain definite goals in life; and to realize his self-worth, commitments and love for the country. A very positive attitude to work and a realization of the dignity of labour are also important as focuses in the general education programme to prepare the students for further training.

It is realized that the general education programme is a relevant programme for vocational training and possible retraining. It is believed, however, that greater focus on the individual, his attitudes and values and his orientations would give him better chances to succeed in his future occupational pursuits.

PAKISTAN

The technical training centres and the vocational institutes are quite strict on the prescribed admission age of 16-35. The rationale for this is that most of the trades involve physical work and the young primary or secondary school graduate is not expected to do hard physical work and acquire the necessary skills for doing certain jobs. The 10-year old graduate of the primary schools or the 13-year old graduate of the junior secondary school must wait until they are 16 before they may enroll. In fact, the admission of primary school graduates who have reached 16 years of age is allowed only in some courses like carpentry and tailoring. In the

meantime, those who are waiting for admission start working on farms or with some mechanics, for example, as helpers, or else join the unemployed in the streets. It is felt that in whatever circumstance he finds himself the graduate may unlearn concepts learned in school through disuse. This makes the investment in education a disinvestment as there is the possibility of relapse into illiteracy.

Discussions with students and observations in the centres revealed the trainees perceptions of the relevance of their schooling to their training. In the carpentry and tailoring course where primary school graduates were admitted along with the junior high graduates, training was made very practical. Those with lower academic background found little difficulty. Their knowledge of Urdu, which is the language for training and which was learned in school, was useful. English was also needed since most of the tools used in the trade were named in English. The basic knowledge of measurement gained in the schools was also found to be relevant for the trainee's understanding of the dimensions and the kinds of materials used in the work activities.

The high school graduates in the welding trade and the automechanic find no difficulty in comprehending the concepts, techniques and methodologies of their respective trades. They had Urdu and enough English for communication, mathematics for computations and measurements, science for understanding the various scientific processes and Islamayat for an appreciation for the moral, spiritual and ethical values of Islam. The seriousness of attitude with which trainees approached their work is a common observation in all the trades.

The trainees perceived the importance of their education as background for the training programmes but they offered some suggestions based on their experience in the training. It was agreed that the matriculation or secondary education certificate should be the minimum educational requirement. The need for technical drawing was also felt by most trainees and the instructors suggested a greater exposure to technical subjects in the school curriculum. There was also a need to improve the science offerings of the schools. As a whole, trainees and instructors realize that technical drawing, mathematics, science and English must be given greater emphasis in the school programmes to better prepare the students for vocational and technical training.

In spite of the fact that there must be a period of waiting for primary and junior high school graduates before going to the vocational technical training centres, knowledge and skills gained earlier in the schools proved to be useful. They are not totally lost although there may be some wastage of time and a decrease in facility in the use of what has been learned. Any inadequacies could be attributed to this, and of course, the lower level of education of the students. The suggestion to make the matriculation the minimum requirements and the improvement of education in the areas indicated by the students and instructors would further strengthen the link between the general education programmes and the occupational training activities in the vocational technical training centres. Students would come to the required age and would have gained more of the subjects that they feel are needed for training.

PHILIPPINES

A review of the general education programmes offered in the elementary and secondary school systems and the competencies needed for the occupational training programmes available to the graduates showed a very significant congruence.

The competencies of communication, handling and manipulation of materials, computing and recording are developed at the elementary and strengthened at the secondary level in such subjects as English, Pilipino, mathematics, and home economics and livelihood skills (elementary)/home management and technology (secondary). Skills in planning, decision making, evaluating and relating to the public are developed in all the subjects but particularly in science and the social studies at both levels. The new emphasis on values and work, so important to training for any occupational area, is an important feature of the general education programme at both levels. However, a general observation of the strategies and approaches used revealed gaps in the functionality and practical applications of learnings acquired.

The greater orientation of current training programmes to the individual and his human qualifications as a worker, in both the service and production occupations, is making new demands on the general education programme. The development of self, attitudes toward work, creativity, planning and decision making skills, the ability to evaluate, to anticipate situations and to innovate are all important tools for success in occupational training as well as in the occupations themselves. Education must provide the foundation in the human development processes which are expected to yield individuals with all these human skills.

On the other hand, the training programmes are expected to build on the educational equipment that the trainees and workers bring with them when they go to training or start work. Self-development in values and behaviour patterns which are required by industry must be enhanced. Although general education introduces the students to values and ethics, training for special occupations has to continue the development and gear this to the specific needs of the occupation for which one is preparing.

A very obvious need in both the general education programme of the schools and the vocational training programme of the centres is the analysis and assessment of the preparation for work that goes on at each level. Training programmes could be further improved if they provided continuity instead of a repetition of activities that have already been undertaken in the schools. The elementary and secondary level revisions of the general education programme with focus on values development and work experience should give training programmes a more stable base for its specialized skills training. The availability and the demands of the occupations should, however, be continously analyzed so that the programmes would be relevant to needs.

Occupational training and retraining take place in the formal educational system as well as in non-formal training centres. Cognizant of the fact that an enhanced quality of labour makes a significant contribution to economic growth and

development, the labour market demands, not only quantity, but also quality in the outputs of training programmes. Trends in the country's development thrusts are a very important factor in the organization of such programmes.

The relationship between education and the labour market as defined by national development goals is necessary and has to be established for the pursuance of these goals. Education, as it develops the manpower resources of the country has to continuously be aware of labour market conditions to be able to meet its demands. The type of training to be given to the people depends to a large extent on trends in this sector and must consider changes in its directions.

Interviews with representatives from employers and teachers in the farming, cottage industries and entrepreneur groups also gave insights on the workers in these areas, and therefore, on what trainees should have to succeed in their work. According to them trainees should have better communication skills in both English and Pilipino. They feel that the country could have a better work force if workers could communicate better both orally and in writing. They would also want workers to be more resourceful, innovative, cost conscious, patient and industrious. They are particularly concerned that the trainees do not seem to love their work; they lack awareness and concern and have very poor work habits. Those in farming, particularly, avoid difficult working situations. Those in cottage industries are dependent for every minute detail in their work processes and work on projects only to satisfy requirements. Those in the entrepreneurial areas get easily discouraged in the face of hardships and criticisms. They also easily lose interest in work that they have started. Workers in the farming area need such special skills as soil sampling and computation while those in cottage industries need skills in design making, dying and computing. Those in entrepreneurship need management and production skills and the ability to assist other entrepreneurs.

Students and former trainees were also interviewed. Former trainees were found to be self employed or working in other occupations. They complained of the inadequacy of elementary and secondary schools in providing them with the competencies and skills in order to meet the demands of the work place. In forming occupations as well as cottage industries they needed higher level skills. School learners and out-of-school youth, therefore, need specialized training before they are able to get employment. Their main problem is generally how to use the sophisticated equipment, tools and machines found in the farms and factories. Most of the trainees and workers interviewed, of course, said that they feel that primary and secondary education should provide them with these special skills. It is, however, generally argued by the industrial sector that such training should take place in the actual work environment.

REPUBLIC OF KOREA

The high school curriculum has undergone revisions in its vocational education programmes. Much of this is based on trends in industrial structure and conditions and the projections for future manpower needs. It is envisioned that vocational education in the secondary level general schools and the role of general

schools for supplying the manpower will be intensified with the increasing demand for craftsmen and technicians in the 1980s and 1990s.

In both general and vocational high schools, the school system proposes the development of a sound mind and body, the cultivation of intellectual ability and skills, the formation of moral principles, the enhancement of the national collective awareness. To realize these objectives, general academic as well as vocational courses are offered in both the general and the vocational high schools with the vocational training in the vocational schools being more specialized.

The general secondary education programme relates to the vocational schools training programmes through a uniform set of basic objectives and programmes. The vocational group goes into a more specialized training in areas defined by the national economy. The desire to raise the general educational level of workers through high schools attached to industry is based on the belief in the transfer of learning from general education to vocational activities. The emphasis on the structure of knowledge and the combination of subject matter, job analysis and functional approaches in general education paves the way for further learning in either the academic or the vocational programmes. It is not so much in the subjects offered but in the objectives and strategies in all areas of the curriculum that provides for the relevant base upon which vocational training is based.

The vocational course in the general high school is recognized as the most outstandingly successful occupational oriented education at the secondary level. These were offered, not only as a means to solve the limited opportunities for higher education but also as the basis for career development in various types of productive skills. The importance of such an education is reflected in the offering of high school education attached to industry for those who did not have the opportunity to acquire one. In Korea, industry is, by law, responsible for giving this high school education to its workers. Where the industry employs less than two hundred employees, working students classes are organized either in the formal or semiformal system. So important is the general education preparation that air and correspondence high schools have also been established to allow most of the population to acquire this.

VIET NAM

The general education schools of Viet Nam have consciously been carrying out the government's mandate to combine education with material production. Scientific knowledge, practical skills and communication are characteristically the focus of learning activities in these schools. The aim is to form the personality of a new type of working man who is free and master of himself, nature and society. The task is to prepare this working man to contribute his productive skills to social progress as well as individual happiness. The activities are actual preparation for and participation in work not only to create material wealth but to develop the skills for self-education and ethical behaviour as well as the orientation to the objectives and rationale of national economic development.

Evidently, the general education graduate is prepared not only for entry into higher schools of learning but to directly take part in production. The school leavers at the lower level may go to the workers' training schools which continue the work training that they acquired in the general education programme. Based on agreement, the training objective of the general education school is not only to prepare the students for studies at higher levels but also to prepare the great majority of them for direct participation in production. Of course the leavers can still attend complementary education classes and correspondence courses or they may be sent to universities, colleges, intermediate vocational-technical education schools by the establishments of production after a period of active work.

Labour production work in the schools has generally resulted in the students' improved attitude toward labour, a strengthening of their ideological understanding, better relationships among themselves and mastery of collective ideals and discipline. The actual participation of students in school building activities like repair and construction of classrooms, teaching aids, desks, benches; labour production like tree planting, rice growing, fishing, fowl raising are significant activities in the schools which help the students move easily into further work training or into actual production.

The labour production education activities may be carried out right in the schools' class activities areas or in workshops or factory departments placed in a school by a factory or an enterprise or in study production units for groups of schools. There are also training and research centres where students from the secondary schools go and take their technical lessons.

Clearly, the general education programme that is complemented by labour production education is relevant not only for further training in work, but for participation in production. There is, however, a gap between social demands and the students' vocational aspirations. Occupations in agriculture, construction, handicrafts, services are not very attractive. It seems that the choice of careers is a part of training that has to be given greater attention in the general secondary education programme. Greater exposure of the students and, as suggested, even the parents to the vocations that need developing for the national economy together with their requirements is felt as an area for concern.

With the recent educational reform, there in great effort toward better co-ordination in the teaching of basic science subjects of general education and the teaching and training for occupations. Further effort is however still needed to develop an appropriate system of occupational training within general education school in order to meet the actual requirements of socio-economic development.

THAILAND

A study of grade VI graduates enrolled in vocational training centres was conducted to find the relevance to their training of their basic knowledge in mathematics and science. The subjects were the students, teachers and resource persons selected from four non-formal education centres. A significant finding of the study was that the failure of the trainees to grasp what was being taught was one

of the main reasons why enrolees dropped out of school. It was concluded that the basic knowledge acquired in the six-year primary level of education was inadequate for furthering the school-leavers' studies in the non-formal vocational training courses, and consequently, for the world of work.

The Government, through the Ministry of Education, has been trying to improve and update vocational education since launching the new elementary school curriculum in 1978. This programme has a work-oriented education group of compulsory subjects; the new lower secondary and upper secondary school curricula were also enforced in 1978 and 1981 respectively. Students at these levels are required to take work education and pre-vocational education courses and are allowed to freely choose optional vocational education courses. Vocational colleges have also revised the disciplines of subjects offered so that they would be more in line with the advancement of modern technology.

The majority of the work force at present has low educational qualifications. Thailand has decided to provide work education and vocational education in each level of general education system. It is aimed at providing adequate vocational knowledge and skill for earning a living, and to develop a positive attitude toward honest vocations and to take up an occupation appropriate to one's ability in order to promote local and national prosperity even at the lower educational level.

The new lower secondary school curriculum is divided into five groups of subjects. Work education and vocational education for one of these groups. These include housekeeping, handyman's work in the home, agricultural work, clothing and embroidery work and nutrition.

The upper secondary school curriculum was implemented in 1981. There are two sets of compulsory subjects, namely: the general education subjects (23 units consisting of Thai language, social studies, health and physical education, and science) and the vocational core subjects (12 units to be chosen from industrial arts, agriculture, home-economics, commerce, arts and crafts, and arts education). In addition, each learner has to choose a number of optional subjects from a list of approved subjects under the following headings: Thai language, social studies, health and physical education, science, mathematics, foreign languages, industrial arts, agriculture, home-economics, commerce, arts and crafts, arts education, or other approved courses.

TURKEY

Technological education is a component of the primary, middle and secondary school curricula. The assumption is that technology liberates man from enslavement for higher purposes and achievement. The reasoning, problem solving, creating and constructing with materials and energies provided by nature that technology education provides is the contribution that it makes for general human development as a preparation for further training in work. These activities develop in the students a general understanding and appreciation of scientific and technological design and production processes and increase their knowledge and skills for a disciplined life. Specifically, they learn technical principles and practices

employed by industry as it provides materials, products and services. They acquire technical competencies in the use of materials, tools, machines and products. In so doing, the student is involved in the search for better ideas and better ways of executing project activities so that he not only understands and appreciates technology, but contributes to its advancement. The orientation to livelihood occupations within the technology education acquaints him with the nature, qualifications, purposes and values in such occupations and helps him to see possible opportunities for himself in those areas. Technical education also offers the student, in a continuing programme from primary to secondary education, exploratory try-out experiences in basic industrial occupations, so useful not only for future training but also for work itself.

As concomitants, life skills are also developed in the student as a relevant preparation for living his life, whether in training programmes or in the world of work. He is enlightened to his role as a consumer, in selecting, purchasing, using and evaluating materials, products and services from industry. He is allowed the opportunity to develop wholesome use of his free time and to explore, experiment and develop ideas which are essentially expressive of himself. The student is exposed to his own culture and acquire standards of quality by which to understand and enjoy the finer things in living. The programme of technological education also develops traits that are necessary for successful social relations.

The common components of subjects in the curriculum are instruction, activities, services, guidance and direction. The main consideration is that the student is an adolescent or a pre-adolescent and therefore has characteristics that must be paid attention to. The programme considers his interest in ordering, organizing, and systematizing knowledge and activities, his present selectiveness in what to learn and his desire to initiate his own learning. The programme that emanates from such considerations should be relevant to the students' preparation for life, for further training or for work itself.

Programmes are conducted to give additional knowledge and skills to those who do not have a basic education and to those who have joined the work force after completing their basic education.

The functional 'read-and-write' campaign takes priority among such groups. This campaign in various phases was started on the 100th birthday of Mustafa Kemal Ataturk, and the whole illiterate population participated in 'read-and-write' and simple arithmetic courses. In this activity priority was given to those older than 12 years and to women living in rural areas. In this way, it was aimed to give the working age population basic knowledge and skills needed for a profession.

Parallelling with these activities, various ministries and institutions organize vocational education courses also.

Chapter Five

CONCLUSIONS

The national studies on the relevance of the content of general education in relation to occupational training and retraining show a general philosophy that pervades all programmes. Whether conducted in school, out of the school or in training centres, the programmes show a combination of academic and vocational education. This points to the acceptance that the worker must not only be physically skillful and able in doing work but most possess intellectual concepts and skills which are deemed necessary for higher level outputs. Planning, analyzing, decision making, assessing, creating are all required for work in the new industrial and business environments. Except in the Republic of Korea, where vocational training is preferred to conform to projections of future manpower needs, the vocational training component of general education programmes are broad and flexible enough for transfer of learning to meet the changing requirements of the exponential rate at which science and technology keeps changing the world of work.

In all countries, programmes of education themselves have been studied and revised to make them relevant to the concept of continuing education, of continued learning that a person engages in to succeed in living in his modern complex world. The study of Thailand showed that primary education is an inadequate foundation for specialized vocational training outside the schools. This could also be true in the other countries as shown by the requirements of a high school certificate in most training programmes. For an educated work force a secondary general education combining academic and vocational subjects has been found of greater value in most of the countries. A general trend seems to be greater focus on the individual personality development of the worker. Obviously values and attitudes are considered significant factors for success in work. Finally, it is agreed that a greater focus on career guidance is necessary. Where this is not yet a regular component of the curriculum, it must be offered. Such a programme should give the students a better insight of self, needs and potential in relation to work. The great number of choices open to the young in the present society makes career guidance a primordial component of general education.

Trends in the manpower needs of the different countries show various levels of development. Most jobs are in the agricultural sector and there is a wide difference in educational levels. There is also a great variation in the technology level development of the nine countries participating in the Study Group Meeting. While the Republic of Korea and Australia are almost ready for the coming computer dominated society the others would like to pay more attention to basic industries. All realize, however, that the young people in every country must be made aware of developments in the technological world.

The Meeting suggested a number of follow-up activities to ensure continuity in the efforts to make general education relevant to training as well as employment. These may be conducted at the national or regional levels.

1. Determination of National manpower needs in view of future development.
2. Studies of the educational systems in terms of manpower development and educational levels.
3. National studies to determine new directions in education and training as a response to employment changes.
4. Career guidance services introduced and developed for the groups directly involved with education (pupils, school leavers, parents, teachers and employers).
5. Identification of the common basic competencies acquired in general education (cognitive, affective, psychomotor) required for either entry to occupational training or leading to gainful employment (self-employment).
6. Follow-up national studies regarding the relevance of competencies acquired in General Education in relation to competencies required in world of work.
7. Experimental projects in the design and construction of core-curriculum consisting of common competencies in related vocations for General Education and in relation to this examine the requirements regarding physical facilities and equipment and teacher training programmes.
8. Consideration of the increasing use of computers in society and, depending on the availability of hardware and software, implementation of appropriate levels of computer education. (This should be in the area of pre-service and in-service teacher education and curriculum development).
9. National studies to identify and evaluate the various curriculum approaches used to guide the initial training of the workforce.

LIST OF SELECTED APEID PUBLICATIONS RELATING TO EDUCATION AND WORK

Inventory of Educational Innovations in Asia and Oceania, EIA Nos. 96-109. 1979. (on vocational and technical education)

* Evaluating pupil development – productive skills training; moral education. 1980

* Developing instructional materials for productive skills; report. 1980

Inventory of Educational Innovations in Asia and the Pacific, EIA Nos. 145-172. 1981. (on vocational and technical education)

* Integrating subject areas in primary education curriculum – a joint innovative project; report. 1982

Education and work in general secondary schools; report. 1982

* Business and commercial education: development of curricula, instructional materials, physical facilities and teacher training; report. 1982

* Social and technical interaction with education, by Phillip Hughes. Occasional Paper No. 13. 1984

* New trends in technical teachers training; final report. 1983

Work as integral part of general education: synthesis of experiences – India, Indonesia, Philippines, Thailand, Viet Nam. 1985

Work and general education; report. 1985.

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* *Out of stock*

The Asia and Pacific Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through nearly 200 national centres which they have associated for this purpose with APEID.

The 26 Member States participating in APEID are Afghanistan, Australia, Bangladesh, Bhutan, China, Fiji, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Samoa, Socialist Republic of Viet Nam, Sri Lanka, Thailand, Tonga, Turkey and Union of Soviet Socialist Republics.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the UNESCO Principal Regional Office for Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

In the fourth cycle of APEID (1987-1991), altogether 14 areas of concentration are proposed, which are grouped into three major programme areas as follows:

1. Education for all;
2. Making education relevant to societal requirements; and
3. Supporting activities and infrastructures common to all levels and systems.